

BAB 6 KESIMPULAN

Bab ini merupakan penutup dari seluruh laporan yang ada. Bab ini terdiri dari 2 bagian yaitu kesimpulan dari seluruh hasil analisis yang sudah dilakukan dan saran yang dapat diajukan.

6.1. Kesimpulan

Dari hasil penelitian dan analisis yang sudah dilakukan dapat ditarik kesimpulan bahwa usulan *layout* tata letak fasilitas kerja keseluruhan yang ada yaitu dengan memindahkan beberapa stasiun kerja, seperti memindahkan stasiun gergaji besar ke ruangan bersekat yang terletak di sebelah gudang belakang ujung, pemindahan stasiun-stasiun kerja yang digunakan setelah stasiun gergaji besar ke area samping dekat stasiun gergaji besar secara berurutan, pemindahan stasiun cat semprot dan cat kuas ke area luar ruangan tepatnya di area yang dahulunya digunakan untuk stasiun gergaji besar, yang diikuti dengan penukaran gudang alat dengan penyimpanan drum cat yang ada agar lebih dekat dengan stasiun cat semprot, serta pemindahan stasiun *packaging* ke dekat jendela pertama dekat pintu. Dari pemindahan-pemindahan yang ada pada *layout* usulan yang ada, didapatkan hasil sebagai berikut:

- a. Dengan menerapkan tata letak usulan, terjadi peningkatan untuk persentase populasi pekerja yang awalnya kurang dari 10%, sekarang menjadi lebih dari atau sama dengan 50%. Seperti pada aktivitas berikut ini:
 - i. Mendorong dari gudang menuju stasiun gergaji besar.
 - ii. Membawa dari stasiun amplas menuju stasiun gergaji kecil dan *drilling*.
 - iii. Membawa dari stasiun gergaji kecil dan *drilling* menuju stasiun gerinda.
 - iv. Mendorong dari stasiun pola menuju stasiun cat semprot.
 - v. Mendorong dari stasiun *press* menuju stasiun cat kuas.
 - vi. Mendorong dari stasiun *press* menuju stasiun cat semprot.
 - vii. Pergantian metode membawa dari stasiun cat semprot dan cat kuas menuju stasiun *packaging* dengan metode mendorong.
- b. Dari hasil analisis berat beban maksimum yang disarankan untuk masing-masing aktivitas *manual mateial handling* yang dilakukan oleh pekerja didapatkan hasil bahwa untuk semua aktivitas yang ada berat beban yang ada

sekarang maupun berat beban yang ada pada usulan dapat dikatakan diterima karena berada dibawah nilai berat beban maksimum yang diperbolehkan.

- c. Tata letak usulan memberikan hasil lingkungan fisik berupa pencahayaan dan tingkat kebisingan yang ada sudah memadai karena pemindahan fasilitas kerja yang ada didasarkan pada hasil pengukuran masing-masing area kemudian dicari tempat yang memiliki pencahayaan yang sesuai dan tingkat kebisingan yang aman. Seperti pada stasiun gergaji besar yang dipindah menuju area luas depan karena tingkat pencahayaan yang dibutuhkan untuk aktivitas pemotongan dengan gergaji besar hanya sebesar 200 – 500 lux, pada letak awalnya didapatkan pencahayaan yang ada 550 lux sehingga melebihi batas yang dianjurkan sedangkan pada letak yang baru didapatkan pencahayaan sebesar 460 lux. Maka kebutuhan pencahayaan terpenuhi. Untuk kebisingannya, karena stasiun gergaji besar yang memiliki tingkat kebisingan paling besar maka diletakkan pada daerah yang dibatasi dengan dinding pembatas sehingga stasiun kerja yang lain tidak terkena kebisingan yang dihasilkan. Begitu juga untuk stasiun kerja yang lainnya, didapatkan hasil faktor lingkungan pencahayaan dan kebisingan yang memadai.
- d. Dengan menggunakan prinsip ekonomi gerakan dan pendekatan ECRS didapatkan usulan perbaikan untuk metode kerja dan fasilitas kerja pada masing-masing stasiun kerja yang ada. Perbaikan fasilitas kerja pada masing-masing stasiun kerja dilakukan dengan lebih mendekatkan fasilitas kerja yang ada sehingga gerakan tangan kiri dan tangan kanan lebih seimbang berdasarkan prinsip ekonomi gerakan. Perbaikan metode kerja berdasarkan pendekatan ECRS didapatkan hasil dengan menghilangkan gerakan membuat pola potongan terlebih dahulu, kemudian diganti dengan memakai hasil potongan awal sebagai cetakan pada produk-produk berikutnya. Menghilangkan gerakan meletakkan produk jadi ke dalam kardus jadi, dan menggantinya dengan gerakan mendorong produk jadi dari atas meja kemudian menjatuhkannya tepat di dalam kardus produk jadi yang diletakkan dibawah meja kerjanya.

6.2. Saran

Beberapa saran yang diberikan pada perusahaan, antara lain:

- a. Perusahaan dapat menerapkan usulan metode kerja yang baru dan pengaturan yang ada diusulkan agar metode kerja yang ada menjadi lebih baik dan lebih optimal.
- b. Perusahaan dapat mempertimbangkan hasil analisis berat beban maksimum dari masing-masing aktivitas *material handling* yang ada sebagai dasar pengawasan untuk aktivitas *material handling* yang dilakukan oleh pekerja sehingga pekerja dapat bekerja dengan optimum.
- c. Perusahaan dapat menerapkan perancangan tata letak fasilitas kerja keseluruhan yang diusulkan, sehingga didapatkan lingkungan kerja yang lebih mendukung dari segi pencahayaan dan kebisingan.
- d. Dapat dilakukan penelitian selanjutnya mengenai waktu baku untuk masing-masing aktivitas produksi yang ada, analisis mengenai faktor lingkungan lain selain pencahayaan dan tingkat kebisingan (seperti suhu, kadar debu di udara, getaran, dll), serta faktor-faktor lain yang mempengaruhi besar beban kerja yang dilakukan oleh pekerja yang ada.

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LAMPIRAN

HASIL PERHITUNGAN INTERPOLASI PERSENTASE POPULASI PEKERJA YANG TIDAK MENGALAMI KELELAHAN PADA KONDISI YANG ADA:

1. Untuk Gerakan Menurunkan (*Lowering*) Kayu dari Lemari menuju Gerobak Pengangkut:

**TABLE 6M - MALE POPULATION PERCENTAGES FOR LOWERING TASKS
BEGINNING ABOVE SHOULDER HEIGHT (>57")**

HAND DISTANCE		7 INCHES					10 INCHES					15 INCHES				
		15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h
OBJECT WEIGHT (POUNDS)	73	30	-	-	16	42	-	-	-	-	27	-	-	-	-	-
		20	-	-	14	28	56	-	-	15	41	-	-	-	-	14
	70	30	-	-	-	20	47	-	-	-	32	-	-	-	-	-
		20	-	11	17	33	60	-	-	19	46	-	-	-	-	18
	67	30	-	-	11	25	52	-	-	-	13	37	-	-	-	11
		20	12	15	22	39	65	-	-	11	24	52	-	-	-	22
	64	30	11	12	15	30	57	-	-	-	17	43	-	-	-	15
		20	16	20	27	45	69	-	-	15	30	57	-	-	-	28
	61	30	15	16	20	36	62	-	-	-	22	49	-	-	-	20
		20	21	25	33	50	73	-	13	19	36	62	-	-	-	34
	58	30	20	22	25	42	67	-	-	13	27	55	-	-	-	26
		20	27	31	39	56	76	14	18	25	42	67	-	-	-	40
	55	30	26	28	32	49	72	13	15	18	34	61	-	-	-	32
		20	33	38	46	62	80	20	23	31	48	71	-	-	-	46
	52	30	32	34	38	55	76	19	20	24	41	66	-	-	-	39
		20	40	45	53	67	83	26	30	38	55	76	-	-	12	53
	49	30	40	42	46	62	80	25	27	31	48	71	-	-	-	46
		20	48	52	59	72	86	33	37	45	61	80	-	12	17	33
	46	30	48	50	53	68	83	33	35	39	56	76	-	-	12	54
		20	55	59	66	77	88	41	45	53	67	83	14	17	24	66
43	30	55	57	61	73	86	41	43	47	63	80	15	16	18	35	
	20	62	66	72	81	89	49	53	60	73	86	21	24	32	49	
40	30	63	65	68	78	89	50	52	56	69	84	22	23	26	44	
	20	69	72	77	85	91	57	61	67	78	89	29	33	41	57	
37	30	70	72	74	83	91	59	61	64	76	87	31	33	36	53	
	20	75	78	82	88	93	65	68	74	83	91	39	43	50	65	
34	30	77	78	80	87	93	67	69	71	81	91	41	43	46	62	
	20	81	83	86	91	96	73	75	80	86	91	49	53	60	73	
31	30	82	83	85	91	96	75	76	78	85	91	53	54	57	71	
	20	85	87	89	93	98	79	81	84	91	96	60	63	69	79	
28	30	87	87	89	93	98	81	82	84	89	93	64	65	67	78	
	20	89	91	93	96	100	85	86	88	91	93	69	72	77	84	
25	30	91	91	93	96	100	87	87	88	91	93	73	74	76	84	
	20	93	93	94	96	100	89	89	90	91	93	78	80	83	89	
22	30	94	94	95	96	100	91	91	91	91	93	86	88	88	91	
	20	95	95	95	96	100	93	93	93	93	93	88	88	88	91	

+ = GREATER THAN 90% - = LESS THAN 10%

Didapatkan Jarak Tangan: 7.87 inchi (yang terletak diantara 7 inchi dan 10 inchi), Berat Benda: 62.99 pound (terletak diantara 61 pound dan 64 pound), Frekuensi Pengangkatannya: 8 jam sekali, dan Jarak Penurunannya: 20.79 inchi (Terletak diantara 30 inchi dan 20 inchi). Berikut ini merupakan hasil interpolasinya:

Untuk Berat 61 lb, Jarak Tangan 7 Inchi, Durasi 8 Jam:

$$\frac{30 - 20}{30 - 20.79} = \frac{62 - 73}{62 - x}$$

$$10(62 - x) = 9.21(-11)$$

$$620 - 10x = -101.31$$

$$-10x = -101.31 - 620$$

$$x = \frac{721.31}{10} = 72.131\%$$

Untuk Berat 61 lb, Jarak Tangan 10 Inchi, Durasi 8 Jam:

$$\frac{30 - 20}{30 - 20.79} = \frac{49 - 62}{49 - x}$$

$$10(49 - x) = 9.21(-13)$$

$$490 - 10x = -119.73$$

$$-10x = -119.73 - 490$$

$$x = \frac{609.73}{10} = 60.973\%$$

Untuk Berat 64 lb, Jarak Tangan 7 Inchi, Durasi 8 Jam:

$$\frac{30 - 20}{30 - 20.79} = \frac{57 - 69}{57 - x}$$

$$10(57 - x) = 9.21(-12)$$

$$570 - 10x = -110.52$$

$$-10x = -110.52 - 570$$

$$x = \frac{680.52}{10} = 68.052\%$$

Untuk Berat 64 lb, Jarak Tangan 10 Inchi, Durasi 8 Jam:

$$\frac{30 - 20}{30 - 20.79} = \frac{43 - 57}{43 - x}$$

$$10(43 - x) = 9.21(-14)$$

$$430 - 10x = -128.94$$

$$-10x = -128.94 - 430$$

$$x = \frac{558.94}{10} = 55.894\%$$

Untuk Berat 64 lb:

$$\frac{10 - 7}{10 - 7.82} = \frac{55.894 - 68.052}{55.894 - x}$$

$$3(55.894 - x) = 2.18(-12.158)$$

$$167.682 - 3x = -26.50444$$

$$-3x = -26.50444 - 167.682$$

$$x = \frac{194.18644}{3} = 64.7288\%$$

Untuk Berat 61 lb:

$$\frac{10 - 7}{10 - 7.82} = \frac{60.973 - 72.131}{60.973 - x}$$

$$3(60.973 - x) = 2.18(-11.158)$$

$$182.919 - 3x = -24.32444$$

$$-3x = -24.32444 - 182.919$$

$$x = \frac{207.24344}{3} = 69.0811\%$$

Interpolasi Akhir

$$\frac{64 - 61}{64 - 62.99} = \frac{64.7288 - 69.0811}{64.7288 - x}$$

$$3(64.7288 - x) = 1.01(-4.3523)$$

$$194.1864 - 3x = -4.39583$$

$$-3x = -4.39583 - 194.1864$$

66.1941% (Terletak diantara 50% dan 75%). Berikut ini merupakan hasil interpolasinya:

Untuk Jarak 76 cm:

$$\frac{75 - 50}{75 - 66.1941} = \frac{24 - 31}{24 - x}$$

$$25(24 - x) = 8.8059(-7)$$

$$600 - 25x = -61.6413$$

$$-25x = -61.6413 - 600$$

$$x = \frac{661.6413}{25} = 26.4657 \text{ kg}$$

Untuk Jarak 76 cm:

$$\frac{75 - 50}{75 - 66.1941} = \frac{27 - 35}{27 - x}$$

$$25(27 - x) = 8.8059(-8)$$

$$675 - 25x = -68.0472$$

$$-25x = -68.0472 - 675$$

$$x = \frac{743.0472}{25} = 29.7219 \text{ kg}$$

Interpolasi Akhir:

$$\frac{76 - 51}{76 - 52.8} = \frac{26.4657 - 29.7219}{26.4657 - x}$$

$$25(26.4657 - x) = 23.2(-3.2562)$$

$$661.6425 - 25x = -75.5438$$

$$-25x = -75.5438 - 661.6425$$

$$x = \frac{736.9863}{25} = 29.4795 \text{ kg}$$

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1. Untuk Gerakan Menurunkan (*Lowering*) Kayu dari Lemari menuju Gerobak Pengangkut:

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BEGINNING ABOVE SHOULDER HEIGHT (>57")**

		HAND DISTANCE	7 INCHES					10 INCHES					15 INCHES						
			FREQUENCY																
			15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h		
OBJECT WEIGHT (POUNDS)	LOWERING DISTANCE (INCHES)	30	-	-	-	16	42	-	-	-	-	27	-	-	-	-	-		
		20	-	-	14	28	56	-	-	-	15	41	-	-	-	-	14		
		10	20	23	31	49	72	-	12	18	34	60	-	-	-	-	32		
		70	-	-	-	20	47	-	-	-	-	32	-	-	-	-	-		
		20	-	11	17	33	60	-	-	-	19	46	-	-	-	-	18		
		10	24	28	37	54	75	12	15	22	39	65	-	-	-	12	37		
		67	-	-	11	25	52	-	-	-	13	37	-	-	-	-	11		
		20	12	15	22	39	65	-	-	11	24	52	-	-	-	-	22		
		10	29	34	42	58	78	16	20	27	44	69	-	-	-	16	42		
		64	30	11	12	15	30	57	-	-	17	43	-	-	-	-	15		
		20	16	20	27	45	69	-	-	15	30	57	-	-	-	-	28		
		10	35	39	48	63	81	21	25	33	50	72	-	-	-	21	48		
		61	30	15	16	20	36	62	-	-	22	49	-	-	-	-	20		
		20	21	25	33	50	73	-	13	19	36	62	-	-	-	-	34		
		10	41	45	53	68	83	26	31	39	56	76	-	-	-	12	26		
		58	30	20	22	25	42	67	-	-	13	27	55	-	-	-	26		
		20	27	31	39	56	76	14	18	25	42	67	-	-	-	14	40		
		10	47	51	59	72	86	33	37	45	61	79	-	11	17	32	59		
		55	30	26	28	32	49	72	13	15	18	34	61	-	-	-	32		
		20	33	38	46	62	80	20	23	31	48	71	-	-	-	19	46		
		10	53	57	64	76	88	39	43	51	66	82	13	16	22	39	65		
		52	30	32	34	38	55	76	19	20	24	41	66	-	-	-	14	39	
		20	40	45	53	67	83	26	30	38	55	76	-	-	-	12	26	53	
		10	60	63	69	80	89	46	50	58	71	85	18	22	29	46	70		
		49	30	40	42	46	62	80	25	27	31	48	71	-	-	-	19	46	
		20	48	52	59	72	86	33	37	45	61	80	-	12	17	33	60		
		10	66	69	74	83	+	53	57	64	76	87	25	29	36	53	75		
		46	30	48	50	53	68	83	33	35	39	56	76	-	-	-	12	26	54
		20	55	59	66	77	88	41	45	53	67	83	14	17	24	41	66		
		10	71	74	79	86	+	60	64	70	80	+	32	36	44	60	79		
		43	30	55	57	61	73	86	41	43	47	63	80	15	16	18	35	61	
		20	62	66	72	81	+	49	53	60	73	86	21	24	32	49	72		
		10	76	79	82	88	+	67	70	75	83	+	41	45	52	67	83		
		40	30	63	65	68	78	89	50	52	56	69	84	22	23	26	44	68	
		20	69	72	77	85	+	57	61	67	78	89	29	33	41	57	77		
		10	81	83	86	+	+	73	75	80	87	+	49	53	60	73	86		
		37	30	70	72	74	83	+	59	61	64	76	87	31	33	36	53	74	
		20	75	78	82	88	+	65	68	74	83	+	39	43	50	65	82		
		10	85	86	89	+	+	78	80	84	89	+	58	62	68	78	89		
		34	30	77	78	80	87	+	67	69	71	81	+	41	43	46	62	80	
		20	81	83	86	+	+	73	75	80	86	+	49	53	60	73	86		
		10	88	89	+	+	+	83	85	87	+	+	67	70	75	83	+		
		31	30	82	83	85	+	+	75	76	78	85	+	53	54	57	71	85	
		20	85	87	89	+	+	79	81	84	+	+	60	63	69	79	89		
		10	+	+	+	+	+	87	88	+	+	+	74	77	81	87	+		
		28	30	87	87	89	+	+	81	82	84	89	+	64	65	67	78	89	
		20	89	+	+	+	+	85	86	88	+	+	69	72	77	84	+		
		10	+	+	+	+	+	+	+	+	+	+	81	83	86	+	+		
		25	30	+	+	+	+	+	87	87	88	+	+	73	74	76	84	+	
		20	+	+	+	+	+	89	+	+	+	+	78	80	83	89	+		
		10	+	+	+	+	+	+	+	+	+	+	86	88	+	+	+		
		22	30	+	+	+	+	+	+	+	+	+	82	82	84	89	+		
		20	+	+	+	+	+	+	+	+	+	+	85	86	88	+	+		
		10	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		

+ = GREATER THAN 90% - = LESS THAN 10%

Didapatkan Jarak Tangan: 7.87 inchi (yang terletak diantara 7 inchi dan 10 inchi), Berat Benda: 62.99 pound (terletak diantara 61 pound dan 64 pound), Frekuensi Pengangkatannya: 8 jam sekali, dan Jarak Penurunannya: 20.79 inchi (Terletak diantara 30 inchi dan 20 inchi). Berikut ini merupakan hasil interpolasinya:

Untuk Berat 61 lb, Jarak Tangan 7 Inchi, Durasi 8 Jam:

$$\frac{30 - 20}{30 - 20.79} = \frac{62 - 73}{62 - x}$$

$$10(62 - x) = 9.21(-11)$$

$$620 - 10x = -101.31$$

$$-10x = -101.31 - 620$$

$$x = \frac{721.31}{10} = 72.131\%$$

Untuk Berat 61 lb, Jarak Tangan 10 Inchi, Durasi 8 Jam:

$$\frac{30 - 20}{30 - 20.79} = \frac{49 - 62}{49 - x}$$

$$10(49 - x) = 9.21(-13)$$

$$490 - 10x = -119.73$$

$$-10x = -119.73 - 490$$

$$x = \frac{609.73}{10} = 60.973\%$$

Untuk Berat 64 lb, Jarak Tangan 7 Inchi, Durasi 8 Jam:

$$\frac{30 - 20}{30 - 20.79} = \frac{57 - 69}{57 - x}$$

$$10(57 - x) = 9.21(-12)$$

$$570 - 10x = -110.52$$

$$-10x = -110.52 - 570$$

$$x = \frac{680.52}{10} = 68.052\%$$

Untuk Berat 64 lb, Jarak Tangan 10 Inchi, Durasi 8 Jam:

$$\frac{30 - 20}{30 - 20.79} = \frac{43 - 57}{43 - x}$$

$$10(43 - x) = 9.21(-14)$$

$$430 - 10x = -128.94$$

$$-10x = -128.94 - 430$$

$$x = \frac{558.94}{10} = 55.894\%$$

Untuk Berat 64 lb:

$$\frac{10 - 7}{10 - 7.82} = \frac{55.894 - 68.052}{55.894 - x}$$

$$3(55.894 - x) = 2.18(-12.158)$$

$$167.682 - 3x = -26.50444$$

$$-3x = -26.50444 - 167.682$$

$$x = \frac{194.18644}{3} = 64.7288\%$$

Untuk Berat 64 lb:

$$\frac{10 - 7}{10 - 7.82} = \frac{60.973 - 72.131}{60.973 - x}$$

$$3(60.973 - x) = 2.18(-11.158)$$

$$182.919 - 3x = -24.32444$$

$$-3x = -24.32444 - 182.919$$

$$x = \frac{207.24344}{3} = 69.0811\%$$

Interpolasi Akhir

$$\frac{64 - 61}{64 - 62.99} = \frac{64.7288 - 69.0811}{64.7288 - x}$$

$$3(64.7288 - x) = 1.01(-4.3523)$$

$$194.1864 - 3x = -4.39583$$

$$-3x = -4.39583 - 194.1864$$

$$x = \frac{198.58223}{3} = 66.1941\%$$

2. Untuk Gerakan Mendorong (*Pushing*) Gerobak Pengangkut dari Gudang menuju Stasiun Gergaji Besar:

TABLE 8M - MALE POPULATION PERCENTAGES FOR PUSHING TASKS
SUSTAINED FORCE

PUSHING DISTANCE		7 FEET					25 FEET					50 FEET					
		30s	1m	5m	30m	8h	30s	1m	5m	30m	8h	30s	1m	5m	30m	8h	
SUSTAINED PUSHING FORCE (POUNDS)	105	57	-	-	-	23	-	-	-	-	-	-	-	-	-	-	-
		37	-	-	-	11	28	-	-	-	-	-	-	-	-	-	-
		25	-	-	-	-	27	-	-	-	-	-	-	-	-	-	-
	100	57	-	-	12	29	-	-	-	-	11	-	-	-	-	-	-
		37	-	-	12	15	34	-	-	-	-	-	-	-	-	-	-
		25	-	-	11	14	32	-	-	-	-	-	-	-	-	-	-
	95	57	-	-	13	16	35	-	-	-	-	16	-	-	-	-	-
		37	-	-	17	20	40	-	-	-	-	14	-	-	-	-	-
		25	-	-	16	19	39	-	-	-	-	11	-	-	-	-	-
	90	57	-	-	18	22	42	-	-	-	-	21	-	-	-	-	-
		37	-	-	22	26	47	-	-	-	-	20	-	-	-	-	-
		25	-	-	21	25	45	-	-	-	-	16	-	-	-	-	-
	85	57	-	-	24	28	49	-	-	-	11	27	-	-	-	-	-
		37	-	13	29	33	53	-	-	-	-	26	-	-	-	-	-
		25	-	12	28	32	52	-	-	-	-	22	-	-	-	-	-
	80	57	-	14	31	36	56	-	-	13	16	35	-	-	-	-	13
		37	-	18	36	41	60	-	-	12	15	33	-	-	-	-	12
		25	-	17	35	39	59	-	-	-	12	29	-	-	-	-	-
	75	57	-	21	39	44	63	-	-	19	23	43	-	-	-	-	19
		37	13	25	44	49	67	-	-	18	21	41	-	-	-	-	18
25		12	24	43	47	66	-	-	14	17	37	-	-	-	-	14	
70	57	16	29	48	52	69	-	11	27	31	51	-	-	12	15	26	
	37	20	33	53	57	72	-	-	25	29	50	-	-	12	14	24	
	25	19	32	52	55	72	-	-	21	25	45	-	-	-	11	20	
65	57	23	38	57	60	75	-	-	18	36	40	60	-	-	19	23	34
	37	28	43	61	64	78	-	-	16	34	38	58	-	-	18	22	33
	25	27	42	60	63	77	-	-	13	29	34	54	-	-	14	19	28
60	57	33	48	65	68	80	-	-	26	46	50	67	-	12	28	33	43
	37	38	52	69	71	82	-	-	25	44	48	66	-	11	27	31	42
	25	37	51	68	71	82	-	-	21	39	44	63	-	-	23	26	37
55	57	44	58	72	75	85	11	37	56	60	75	-	20	39	43	53	
	37	49	62	76	78	86	14	35	55	58	74	-	19	38	42	52	
	25	47	61	75	77	86	13	31	50	54	71	-	15	33	37	47	
50	57	55	67	79	81	88	20	49	66	69	81	-	32	51	55	62	
	37	59	71	82	83	89	23	47	65	68	80	-	30	50	53	61	
	25	58	70	81	83	89	23	43	61	64	78	-	25	45	49	57	
45	57	66	76	85	86	91	32	61	75	77	86	15	45	62	66	71	
	37	70	78	86	88	92	36	59	74	76	85	19	43	61	65	70	
	25	69	78	86	87	91	35	55	71	73	84	20	38	57	61	67	
40	57	76	83	89	91	94	47	72	82	84	91	28	58	73	76	79	
	37	78	85	91	92	94	50	71	81	83	90	33	57	72	75	78	
	25	78	84	91	92	94	50	67	79	81	88	34	53	69	72	75	
35	57	84	88	91	92	94	62	81	88	89	94	44	71	82	83	85	
	37	85	91	92	93	94	65	80	87	89	93	49	70	81	83	85	
	25	85	89	91	92	93	65	78	86	87	91	50	67	79	81	83	
30	57	91	92	93	94	95	75	88	91	92	94	62	82	88	89	91	
	37	91	92	93	94	95	77	87	91	92	93	66	81	88	89	91	
	25	91	92	93	94	95	77	86	91	92	93	67	79	87	88	88	
25	57	91	92	93	94	95	86	91	92	93	94	77	89	91	92	93	
	37	91	92	93	94	95	87	91	92	93	94	80	89	91	92	93	
	25	91	92	93	94	95	87	91	92	93	94	80	88	91	92	93	
20	57	91	92	93	94	95	91	92	93	94	95	88	91	92	93	94	
	37	91	92	93	94	95	91	92	93	94	95	88	91	92	93	94	
	25	91	92	93	94	95	91	92	93	94	95	88	91	92	93	94	

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Didapatkan Ketinggian Tangannya saat memulai adalah 44.29 inchi, Jarak mendorongnya adalah 50.95 Feet, dan Gaya Berkelanjutan yang digunakan untuk mendorong beban yang ada adalah 62.99 pound. Jika dilihat dari tabel, jarak maksimum yang dihitung pada tabel adalah 50 Feet, karena jarak yang ada antara Gudang dan Area Gergaji Besar adalah 50.95 Feet maka hasilnya melebihi batas yang dianjurkan sehingga dianggap nilai presentase populasi yang diperbolehkan melakukan aktivitas tersebut adalah kurang dari 10%.

- Untuk Gerakan Mengangkat (*Lifting*) Kardus Hasil Stasiun Gergaji Besar ke Gerobak Pengangkut:

TABLE 2M - MALE POPULATION PERCENTAGES FOR LIFTING TASKS
ENDING BETWEEN KNUCKLE AND SHOULDER HEIGHT ($\geq 31"$ AND $\leq 57"$)

HAND DISTANCE		7 INCHES					10 INCHES					15 INCHES					
OBJECT WEIGHT (POUNDS)	LIFTING DISTANCE (INCHES)	FREQUENCY ONE LIFT EVERY															
		15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h	
96	30	-	-	-	-	12	-	-	-	-	-	-	-	-	-	-	-
	20	-	-	-	-	25	-	-	-	-	-	-	-	-	-	-	-
	10	-	-	16	21	46	-	-	-	-	30	-	-	-	-	-	-
92	30	-	-	-	-	16	-	-	-	-	-	-	-	-	-	-	-
	20	-	-	-	-	30	-	-	-	-	16	-	-	-	-	-	-
	10	-	-	20	26	52	-	-	-	13	36	-	-	-	-	-	-
88	30	-	-	-	-	21	-	-	-	-	-	-	-	-	-	-	-
	20	-	-	-	13	36	-	-	-	-	21	-	-	-	-	-	-
	10	-	11	25	32	57	-	-	12	17	42	-	-	-	-	-	13
84	30	-	-	-	-	27	-	-	-	-	13	-	-	-	-	-	-
	20	-	-	12	17	42	-	-	-	-	26	-	-	-	-	-	-
	10	-	15	31	38	63	-	-	17	22	48	-	-	-	-	-	17
80	30	-	-	-	11	33	-	-	-	-	18	-	-	-	-	-	-
	20	-	-	17	23	49	-	-	-	11	32	-	-	-	-	-	-
	10	12	20	38	44	68	-	-	22	28	54	-	-	-	-	-	23
76	30	-	-	11	16	40	-	-	-	-	24	-	-	-	-	-	-
	20	-	-	23	29	55	-	-	11	15	39	-	-	-	-	-	11
	10	17	26	45	51	72	-	13	29	35	60	-	-	-	-	-	29
72	30	-	-	16	21	47	-	-	-	-	31	-	-	-	-	-	-
	20	-	14	30	36	61	-	-	16	21	47	-	-	-	-	-	16
	10	23	33	52	58	77	11	19	36	42	66	-	-	-	-	13	36
68	30	-	11	22	28	54	-	-	-	15	39	-	-	-	-	-	11
	20	12	20	37	44	67	-	-	22	28	54	-	-	-	-	-	23
	10	30	41	59	64	81	16	25	43	50	72	-	-	14	19	44	
64	30	12	17	30	36	61	-	-	16	21	47	-	-	-	-	-	16
	20	18	27	45	52	73	-	14	29	36	61	-	-	-	-	-	30
	10	38	49	65	70	84	23	33	51	57	77	-	-	20	26	52	
60	30	18	25	38	45	68	-	12	23	29	55	-	-	-	-	-	24
	20	25	35	54	60	78	13	20	38	44	68	-	-	-	15	39	
	10	47	57	72	76	87	31	42	59	64	81	-	13	28	34	60	
56	30	26	33	48	54	74	13	19	32	38	63	-	-	-	-	-	32
	20	34	45	62	67	83	20	29	47	53	74	-	-	17	22	48	
	10	56	65	77	81	95	41	51	67	71	85	13	20	37	44	67	
52	30	36	43	57	63	80	21	28	41	48	70	-	-	13	17	42	
	20	44	54	69	74	86	28	39	56	62	80	-	-	11	25	31	57
	10	64	72	82	85	99	50	60	73	77	88	20	29	47	53	74	
48	30	46	54	66	71	85	31	38	52	58	77	-	11	21	27	53	
	20	54	63	76	80	95	39	49	65	70	84	12	19	36	42	66	
	10	72	78	86	88	100	60	68	80	83	95	30	40	57	63	80	
44	30	57	64	74	78	88	42	50	62	67	83	14	19	32	38	63	
	20	64	72	82	85	95	51	60	74	77	88	20	29	47	53	74	
	10	79	84	91	93	100	69	76	85	87	95	42	51	67	71	85	
40	30	68	73	81	84	95	55	61	72	76	87	24	31	44	51	72	
	20	73	79	87	89	99	62	70	81	84	95	32	42	59	64	81	
	10	85	88	94	96	100	77	82	89	91	99	54	63	75	79	89	
36	30	77	81	87	89	99	66	72	80	83	95	38	45	58	63	80	
	20	81	85	91	93	100	72	78	86	88	99	46	56	70	74	87	
	10	89	92	97	99	100	84	88	94	96	100	66	73	82	85	99	
32	30	84	87	93	95	100	77	81	86	88	99	53	60	70	74	87	
	20	87	90	96	98	100	81	85	91	93	100	61	69	79	83	99	
	10	92	94	99	100	100	89	93	98	100	100	76	82	88	91	100	
28	30	93	95	99	100	100	85	88	94	96	100	68	73	81	84	99	
	20	95	97	100	100	100	88	92	97	99	100	74	79	87	89	99	
	10	98	99	100	100	100	95	98	100	100	100	85	88	94	96	100	

+ = GREATER THAN 90% - = LESS THAN 10%

Didapatkan Jarak Tangan: 7.28 inci (yang terletak diantara 7 inci dan 10 inci), Berat Benda: 52.42 pound (terletak diantara 52 pound dan 56 pound), Frekuensi Pengangkatannya: 8 jam sekali, dan Jarak Pengangkatannya: 13.27 inci (Terletak diantara 10 inci dan 20 inci). Berikut ini merupakan hasil interpolasinya:

Untuk Berat 52 lb, Jarak Tangan 7 Inchi, Durasi 8 Jam:

$$\frac{20 - 10}{20 - 13.27} = \frac{86 - 90}{86 - x}$$

$$10(86 - x) = 6.73(-4)$$

$$860 - 10x = -26.92$$

$$-10x = -26.92 - 860$$

$$x = \frac{886.92}{10} = 88.692\%$$

Untuk Berat 52 lb, Jarak Tangan 10 Inchi, Durasi 8 Jam:

$$\frac{20 - 10}{20 - 13.27} = \frac{80 - 88}{80 - x}$$

$$10(80 - x) = 6.73(-8)$$

$$800 - 10x = -53.84$$

$$-10x = -53.84 - 800$$

$$x = \frac{853.84}{10} = 85.384\%$$

Untuk Berat 56 lb, Jarak Tangan 10 Inchi, Durasi 8 Jam:

$$\frac{20 - 10}{20 - 13.27} = \frac{74 - 85}{74 - x}$$

$$10(74 - x) = 6.73(-11)$$

$$740 - 10x = -74.03$$

$$-10x = -74.03 - 740$$

$$x = \frac{814.03}{10} = 81.403\%$$

Untuk Berat 52 lb:

$$\frac{10 - 7}{10 - 7.28} = \frac{85.384 - 88.692}{85.384 - x}$$

$$3(85.384 - x) = 2.72(-3.308)$$

$$256.152 - 3x = -8.9978$$

$$-3x = -8.9978 - 256.152$$

$$x = \frac{265.1498}{3} = 88.3833\%$$

Untuk Berat 56 lb:

$$\frac{10 - 7}{10 - 7.28} = \frac{81.403 - 87.711}{81.403 - x}$$

$$3(81.403 - x) = 2.72(-6.308)$$

$$244.203 - 3x = -17.1578$$

$$-3x = -17.1578 - 244.203$$

$$x = \frac{261.3668}{3} = 87.1223\%$$

Interpolasi Akhir:

$$\frac{56 - 52}{56 - 52.42} = \frac{87.1223 - 88.3833}{87.1223 - x}$$

$$4(87.1223 - x) = 3.58(-1.261)$$

$$348.4892 - 4x = -4.5144$$

$$-4x = -4.5144 - 348.4892$$

$$x = \frac{353.0036}{4} = 88.2509\%$$

4. Untuk Gerakan Mendorong (*Pushing*) Gerobak Pengangkut dari Stasiun Gergaji Besar menuju Stasiun Amplas:

$$-20x = 4.58 - 1620$$

$$x = \frac{1615.42}{20} = 80.771\%$$

Untuk Gaya Berkelanjutan 50 lb, Jarak Mendorong 50 feet, Durasi 8 Jam:

$$\frac{57 - 37}{57 - 52.42} = \frac{62 - 61}{62 - x}$$

$$20(62 - x) = 4.58(1)$$

$$1240 - 20x = 4.58$$

$$-20x = 4.58 - 1240$$

$$x = \frac{1235.42}{20} = 61.771\%$$

Untuk Gaya Berkelanjutan 55 lb, Jarak Mendorong 25 feet, Durasi 8 Jam:

$$\frac{57 - 37}{57 - 52.42} = \frac{75 - 74}{75 - x}$$

$$20(75 - x) = 4.58(1)$$

$$1500 - 20x = 4.58$$

$$-20x = 4.58 - 1500$$

$$x = \frac{1495.42}{20} = 74.771\%$$

Untuk Gaya Berkelanjutan 55 lb, Jarak Mendorong 50 feet, Durasi 8 Jam:

$$\frac{57 - 37}{57 - 52.42} = \frac{53 - 52}{53 - x}$$

$$20(53 - x) = 4.58(1)$$

$$1060 - 20x = 4.58$$

$$-20x = 4.58 - 1060$$

$$x = \frac{1055.42}{20} = 52.771\%$$

Untuk Gaya Berkelanjutan 50 lb:

$$\frac{50 - 25}{50 - 44.16} = \frac{61.771 - 80.771}{61.771 - x}$$

$$25(61.771 - x) = 5.84(-19)$$

$$1544.275 - 25x = -110.96$$

$$-25x = -110.96 - 1544.275$$

$$x = \frac{1655.235}{25} = 66.2094\%$$

Untuk Gaya Berkelanjutan 55 lb:

$$\frac{50 - 25}{50 - 44.16} = \frac{52.771 - 74.771}{52.771 - x}$$

$$25(52.771 - x) = 5.84(-22)$$

$$1319.275 - 25x = -128.48$$

$$-25x = -128.48 - 1319.275$$

$$x = \frac{1447.755}{25} = 57.9102\%$$

Interpolasi Akhir:

$$\frac{55 - 50}{55 - 52.42} = \frac{57.9102 - 66.2094}{57.9102 - x}$$

$$5(57.9102 - x) = 2.58(-8.2992)$$

$$289.551 - 5x = -21.4119$$

$$-5x = -21.4119 - 289.551$$

$$x = \frac{310.9629}{5} = 62.1926\%$$

5. Untuk Gerakan Mengangkat (*Lifting*) Kardus Berisi Kayu Hasil Amplas dari Lantai:

TABLE 2M - MALE POPULATION PERCENTAGES FOR LIFTING TASKS
ENDING BETWEEN KNUCKLE AND SHOULDER HEIGHT (≥31" AND ≤57")

HAND DISTANCE		7 INCHES					10 INCHES					15 INCHES						
		15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h		
OBJECT WEIGHT (POUNDS)	LIFTING DISTANCE (INCHES)	96	30	-	-	-	12	-	-	-	-	-	-	-	-	-	-	
		20	-	-	-	25	-	-	-	-	12	-	-	-	-	-		
		10	-	-	16	21	46	-	-	-	-	30	-	-	-	-	-	
		92	30	-	-	-	16	-	-	-	-	-	-	-	-	-	-	
		20	-	-	-	30	-	-	-	-	16	-	-	-	-	-		
		10	-	-	20	26	52	-	-	-	13	36	-	-	-	-	-	
		88	30	-	-	-	21	-	-	-	-	-	-	-	-	-	-	
		20	-	-	-	13	36	-	-	-	-	21	-	-	-	-	-	
		10	-	11	25	32	57	-	-	12	17	42	-	-	-	-	13	
		84	30	-	-	-	27	-	-	-	-	13	-	-	-	-	-	
		20	-	-	12	17	42	-	-	-	-	26	-	-	-	-	-	
		10	-	15	31	38	63	-	-	17	22	48	-	-	-	-	17	
		80	30	-	-	-	11	33	-	-	-	-	18	-	-	-	-	-
		20	-	-	17	23	49	-	-	-	11	32	-	-	-	-	-	
		10	12	20	38	44	68	-	-	22	28	54	-	-	-	-	23	
		76	30	-	-	11	16	40	-	-	-	-	24	-	-	-	-	-
		20	-	-	23	29	55	-	-	11	15	39	-	-	-	-	11	
		10	17	26	45	51	72	-	13	29	35	60	-	-	-	-	29	
		72	30	-	-	16	21	47	-	-	-	-	31	-	-	-	-	-
		20	-	14	30	36	61	-	-	16	21	47	-	-	-	-	16	
10	23	33	52	58	77	11	19	36	42	66	-	-	-	13	36			
68	30	-	11	22	28	54	-	-	-	15	39	-	-	-	-	11		
20	-	12	20	37	44	67	-	-	22	28	54	-	-	-	-	23		
10	30	41	59	64	81	16	25	43	50	72	-	-	14	19	44			
64	30	12	17	30	36	61	-	-	16	21	47	-	-	-	-	16		
20	18	27	45	52	73	-	14	29	36	61	-	-	-	-	30			
10	38	49	65	70	84	23	33	51	57	77	-	-	20	26	52			
60	30	18	25	38	45	68	-	12	23	29	55	-	-	-	-	24		
20	25	35	54	60	78	13	20	38	44	68	-	-	-	15	39			
10	47	57	72	76	87	31	42	59	64	81	-	13	28	34	60			
56	30	26	33	48	54	74	13	19	32	38	63	-	-	-	-	32		
20	34	45	62	67	83	20	29	47	53	74	-	-	17	22	48			
10	56	65	77	81	+	41	51	67	71	85	13	20	37	44	67			
52	30	36	43	57	63	80	21	28	41	48	70	-	-	13	17	42		
20	44	54	69	74	86	28	39	56	62	80	-	11	25	31	57			
10	64	72	82	85	+	50	60	73	77	88	20	29	47	53	74			
48	30	46	54	66	71	85	31	38	52	58	77	-	11	21	27	53		
20	54	63	76	80	+	39	49	65	70	84	12	19	36	42	66			
10	72	78	86	88	+	60	68	80	83	+	30	40	57	63	80			
44	30	57	64	74	78	86	42	50	62	67	83	14	19	32	38	63		
20	64	72	82	85	+	51	60	74	77	88	20	29	47	53	74			
10	79	84	+	+	+	69	76	85	87	+	42	51	67	71	85			
40	30	68	73	81	84	+	55	61	72	76	87	24	31	44	51	72		
20	73	79	87	89	+	62	70	81	84	+	32	42	59	64	81			
10	85	88	+	+	+	77	82	89	+	+	54	63	75	79	89			
36	30	77	81	87	89	+	66	72	80	83	+	38	45	58	63	80		
20	81	85	+	+	+	72	78	86	88	+	46	56	70	74	87			
10	89	+	+	+	+	84	88	+	+	+	66	73	82	85	+			
32	30	84	87	+	+	+	77	81	86	88	+	53	60	70	74	87		
20	87	+	+	+	+	81	85	+	+	+	61	69	79	83	+			
10	+	+	+	+	+	89	+	+	+	+	75	82	88	+	+			
28	30	+	+	+	+	+	85	88	+	+	+	68	73	81	84	+		
20	+	+	+	+	+	88	+	+	+	+	74	79	87	89	+			
10	+	+	+	+	+	+	+	+	+	+	85	88	+	+	+			

+ = GREATER THAN 90% - = LESS THAN 10%

Didapatkan Jarak Tangan: 7.64 inchi (yang terletak diantara 7 inchi dan 10 inchi), Berat Benda: 40.08 pound (terletak diantara 40 pound dan 44 pound), Frekuensi Pengangkatannya: 4 jam sekali (terletak diantara 5 menit dan 8 jam), dan Jarak Pengangkatannya: 21.77 inchi (Terletak diantara 20 inchi dan 30 inchi). Berikut ini merupakan hasil interpolasinya:

Untuk Berat 44 lb, Jarak Tangan 7 Inchi, Jarak Pengangkatan 30 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{88 - 78}{88 - x}$$

$$7.917(88 - x) = 4(10)$$

$$696.696 - 7.917x = 40$$

$$-7.917x = 40 - 696.696$$

$$x = \frac{656.696}{7.917} = 82.9476\%$$

Untuk Berat 44 lb, Jarak Tangan 7 Inchi, Jarak Pengangkatan 20 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 85}{90 - x}$$

$$7.917(90 - x) = 4(5)$$

$$712.53 - 7.917x = 20$$

$$-7.917x = 20 - 712.53$$

$$x = \frac{692.53}{7.917} = 87.4738\%$$

Untuk Berat 44 lb, Jarak Tangan 10 Inchi, Jarak Pengangkatan 30 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{83 - 67}{83 - x}$$

$$7.917(83 - x) = 4(16)$$

$$657.111 - 7.917x = 64$$

$$-7.917x = 64 - 657.111$$

$$x = \frac{593.111}{7.917} = 74.9161\%$$

Untuk Berat 44 lb, Jarak Tangan 10 Inchi, Jarak Pengangkatan 20 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{88 - 77}{88 - x}$$

$$7.917(88 - x) = 4(11)$$

$$696.696 - 7.917x = 44$$

$$-7.917x = 44 - 696.696$$

$$x = \frac{652.696}{7.917} = 82.4423\%$$

Untuk Berat 40 lb, Jarak Tangan 7 Inchi, Jarak Pengangkatan 30 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 84}{90 - x}$$

$$7.917(90 - x) = 4(6)$$

$$712.53 - 7.917x = 24$$

$$-7.917x = 24 - 712.53$$

$$x = \frac{688.53}{7.917} = 86.9685\%$$

Untuk Berat 40 lb, Jarak Tangan 7 Inchi, Jarak Pengangkatan 20 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 89}{90 - x}$$

$$7.917(90 - x) = 4(1)$$

$$712.53 - 7.917x = 4$$

$$-7.917x = 4 - 712.53$$

$$x = \frac{708.53}{7.917} = 89.4948\%$$

Untuk Berat 40 lb, Jarak Tangan 10 Inchi, Jarak Pengangkatan 30 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{87 - 76}{87 - x}$$

$$7.917(87 - x) = 4(11)$$

$$688.779 - 7.917x = 44$$

$$-7.917x = 44 - 688.779$$

$$x = \frac{644.779}{7.917} = 81.4423\%$$

Untuk Berat 40 lb, Jarak Tangan 10 Inchi, Jarak Pengangkatan 20 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 84}{90 - x}$$

$$7.917(90 - x) = 4(6)$$

$$712.53 - 7.917x = 24$$

$$-7.917x = 24 - 712.53$$

$$x = \frac{688.53}{7.917} = 86.9685\%$$

Untuk Berat 44 lb, Jarak Tangan 7 Inchi:

$$\frac{30 - 20}{30 - 21.77} = \frac{82.9476 - 87.4738}{82.9476 - x}$$

$$10(82.9476 - x) = 8.23(-4.5262)$$

$$829.476 - 10x = -37.2506$$

$$-10x = -37.2506 - 829.476$$

$$x = \frac{866.7266}{10} = 86.6727\%$$

Untuk Berat 44 lb, Jarak Tangan 10 Inchi:

$$\frac{30 - 20}{30 - 21.77} = \frac{74.9162 - 82.4423}{74.9162 - x}$$

$$10(74.9162 - x) = 8.23(-2.5263)$$

$$749.162 - 10x = -61.9406$$

$$-10x = -61.9406 - 749.162$$

$$x = \frac{811.1016}{10} = 81.1102\%$$

Untuk Berat 40 lb, Jarak Tangan 7 Inchi:

$$\frac{30 - 20}{30 - 21.77} = \frac{86.9685 - 89.4948}{86.9685 - x}$$

$$10(86.9685 - x) = 8.23(-2.5263)$$

$$869.685 - 10x = -20.7914$$

$$-10x = -20.7914 - 869.685$$

$$x = \frac{890.4764}{10} = 89.0476\%$$

Untuk Berat 40 lb, Jarak Tangan 10 Inchi:

$$\frac{30 - 20}{30 - 21.77} = \frac{81.4423 - 86.9685}{81.4423 - x}$$

$$10(81.4423 - x) = 8.23(-5.5262)$$

$$814.423 - 10x = -45.4806$$

$$-10x = -45.4806 - 814.423$$

$$x = \frac{859.9036}{10} = 85.9904\%$$

Untuk Berat 44 lb:

$$\frac{10 - 7}{10 - 7.64} = \frac{81.1102 - 86.6727}{81.1102 - x}$$

$$3(81.1102 - x) = 2.36(-5.5625)$$

$$243.3306 - 3x = -13.1275$$

$$-3x = -13.1275 - 243.3306$$

$$x = \frac{256.4581}{3} = 85.486\%$$

Untuk Berat 40 lb:

$$\frac{10 - 7}{10 - 7.64} = \frac{83.9904 - 89.0476}{83.9904 - x}$$

$$3(83.9904 - x) = 2.36(-3.0572)$$

$$257.9712 - 3x = -7.215$$

$$-3x = -7.215 - 257.9712$$

$$x = \frac{265.1862}{3} = 88.3954\%$$

Interpolasi Akhir:

$$\frac{44 - 40}{44 - 40.08} = \frac{85.486 - 88.3954}{85.486 - x}$$

$$4(85.486 - x) = 3.92(-2.9094)$$

$$341.944 - 4x = -11.4048$$

$$-4x = -11.4048 - 341.944$$

$$x = \frac{353.3488}{4} = 88.3372\%$$

6. Untuk Gerakan Membawa (*Carrying*) Kardus Berisi Produk Hasil Amplas dari Stasiun Amplas menuju Stasiun Gergaji Kecil dan *Drilling*:

TABLE 11M - MALE POPULATION PERCENTAGES FOR CARRYING TASKS

CARRYING DISTANCE		7 FEET					14 FEET					28 FEET					
		15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h	
OBJECT WEIGHT (POUNDS)	99	43	-	-	-	18	50	-	-	-	-	36	-	-	-	-	22
		33	-	11	22	36	67	-	-	11	21	54	-	-	-	15	47
	94	43	-	-	12	23	56	-	-	-	12	42	-	-	-	-	28
		33	-	15	28	42	71	-	-	15	27	60	-	-	11	20	53
	89	43	-	-	17	29	62	-	-	-	17	49	-	-	-	-	34
		33	14	20	35	49	75	-	-	21	34	65	-	15	16	26	59
	85	43	-	-	22	35	66	-	-	11	21	54	-	-	-	-	40
		33	18	25	40	54	78	-	-	26	39	70	-	19	20	32	64
	81	43	-	14	27	41	70	-	-	15	27	60	-	-	-	14	46
		33	23	31	46	59	81	-	13	31	45	73	11	24	25	38	68
	77	43	13	19	33	47	74	-	-	20	33	65	-	-	-	19	52
		33	29	37	52	64	84	-	17	38	51	77	15	30	31	44	73
	73	43	18	25	40	53	78	-	-	26	39	69	-	13	14	25	58
		33	35	44	58	69	86	11	23	44	57	80	21	37	38	50	76
	69	43	24	32	46	59	81	-	13	32	46	74	-	18	19	31	63
		33	42	50	64	74	88	16	29	51	63	83	27	44	45	57	80
	65	43	31	39	53	65	84	-	19	40	53	78	-	25	26	38	69
		33	49	57	69	78	+	22	37	58	69	86	34	51	52	63	83
	61	43	39	47	60	71	87	13	26	47	60	82	16	32	34	46	74
		33	57	64	74	82	+	29	44	64	74	88	42	58	59	69	86
	57	43	47	55	67	76	89	19	34	55	67	85	23	41	42	54	79
		33	64	70	79	85	+	37	52	70	78	+	50	65	66	74	88
	53	43	56	62	73	80	+	27	43	63	73	88	31	50	51	62	83
		33	70	75	83	88	+	46	60	76	83	+	58	71	72	79	+
49	43	64	70	78	84	+	37	52	70	78	+	41	58	59	69	86	
	33	76	80	86	+	+	55	68	81	86	+	66	77	78	83	+	
45	43	71	76	83	88	+	47	61	76	83	+	51	67	68	76	89	
	33	81	85	89	+	+	64	75	85	89	+	73	82	82	87	+	
41	43	78	82	87	+	+	58	70	82	87	+	61	74	75	82	+	
	33	86	88	+	+	+	72	81	88	+	+	80	86	87	+	+	
36	43	85	87	+	+	+	70	79	88	+	+	73	82	83	87	+	
	33	+	+	+	+	+	81	87	+	+	+	86	+	+	+	+	
31	43	+	+	+	+	+	81	87	+	+	+	82	89	89	+	+	
	33	+	+	+	+	+	88	+	+	+	+	+	+	+	+	+	

> 28

+ = GREATER THAN 90% - = LESS THAN 10%

Didapatkan Ketinggian Tangannya saat memulai adalah 38.39 inchi, Jarak Membawanya adalah 59.78 Feet, dan Berat beban yang dibawa adalah 40.08 pound. Jika dilihat dari tabel, jarak maksimum yang dihitung pada tabel adalah 25 Feet, karena jarak yang ada antara Stasiun Amplas dan Stasiun Gergaji Kecil dan *Drilling* adalah 59.78 Feet maka hasilnya melebihi batas yang dianjurkan sehingga dianggap nilai presentase populasi yang diperbolehkan melakukan aktivitas tersebut adalah kurang dari 10%.

7. Untuk Gerakan Mengangkat (*Lifting*) Kardus Berisi Kayu Hasil Gergaji Kecil dan *Drilling* dari Lantai:

TABLE 2M - MALE POPULATION PERCENTAGES FOR LIFTING TASKS
ENDING BETWEEN KNUCKLE AND SHOULDER HEIGHT (≥31" AND ≤57")

HAND DISTANCE		7 INCHES					10 INCHES					15 INCHES					
		15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h	
OBJECT WEIGHT (POUNDS)	96	30	-	-	-	12	-	-	-	-	-	-	-	-	-	-	-
		20	-	-	-	25	-	-	-	-	-	-	-	-	-	-	-
		10	-	-	16	21	46	-	-	-	-	30	-	-	-	-	-
	92	30	-	-	-	16	-	-	-	-	-	-	-	-	-	-	-
		20	-	-	-	30	-	-	-	-	16	-	-	-	-	-	-
		10	-	-	20	26	52	-	-	-	13	36	-	-	-	-	-
	88	30	-	-	-	21	-	-	-	-	-	-	-	-	-	-	-
		20	-	-	-	13	36	-	-	-	21	-	-	-	-	-	-
		10	-	11	25	32	57	-	-	12	17	42	-	-	-	-	13
	84	30	-	-	-	27	-	-	-	-	13	-	-	-	-	-	-
		20	-	-	12	17	42	-	-	-	26	-	-	-	-	-	-
		10	-	15	31	38	63	-	-	17	22	48	-	-	-	-	17
	80	30	-	-	-	11	33	-	-	-	-	18	-	-	-	-	-
		20	-	-	17	23	49	-	-	-	11	32	-	-	-	-	-
		10	12	20	38	44	68	-	-	22	28	54	-	-	-	-	23
	76	30	-	-	11	16	40	-	-	-	-	24	-	-	-	-	-
		20	-	-	23	29	55	-	-	11	15	39	-	-	-	-	11
		10	17	26	45	51	72	-	13	29	35	60	-	-	-	-	29
	72	30	-	-	16	21	47	-	-	-	-	31	-	-	-	-	-
		20	-	14	30	36	61	-	-	16	21	47	-	-	-	-	16
		10	23	33	52	58	77	11	19	36	42	66	-	-	-	13	36
	68	30	-	11	22	28	54	-	-	-	15	39	-	-	-	-	11
		20	-	20	37	44	67	-	-	22	28	54	-	-	-	-	23
		10	30	41	59	64	81	16	25	43	50	72	-	-	14	19	44
64	30	12	17	30	36	61	-	-	16	21	47	-	-	-	-	16	
	20	18	27	45	52	73	-	14	29	36	61	-	-	-	-	30	
	10	38	49	65	70	84	23	33	51	57	77	-	-	20	26	52	
60	30	18	25	38	45	68	-	12	23	29	55	-	-	-	-	24	
	20	25	35	54	60	78	13	20	38	44	68	-	-	-	15	39	
	10	47	57	72	76	87	31	42	59	64	81	-	13	28	34	60	
56	30	26	33	48	54	74	13	19	32	38	63	-	-	-	-	32	
	20	34	45	62	67	83	20	29	47	53	74	-	-	17	22	48	
	10	56	65	77	81	+	41	51	67	71	85	13	20	37	44	67	
52	30	36	43	57	63	80	21	28	41	48	70	-	-	13	17	42	
	20	44	54	69	74	86	28	39	56	62	80	-	11	25	31	57	
	10	64	72	82	85	+	50	60	73	77	88	20	29	47	53	74	
48	30	46	54	66	71	85	31	38	52	58	77	-	11	21	27	53	
	20	54	63	76	80	+	39	49	65	70	84	12	19	36	42	66	
	10	72	78	86	88	+	60	68	80	83	+	30	40	57	63	80	
44	30	57	64	74	78	88	42	50	62	67	83	14	19	32	38	63	
	20	64	72	82	85	+	51	60	74	77	88	20	29	47	53	74	
	10	79	84	+	+	+	69	76	85	87	+	42	51	67	71	85	
40	30	68	73	81	84	+	55	61	72	76	87	24	31	44	51	72	
	20	73	79	87	89	+	62	70	81	84	+	32	42	59	64	81	
	10	85	89	+	+	+	77	82	89	+	+	54	63	75	79	89	
36	30	77	81	87	89	+	66	72	80	83	+	38	45	58	63	80	
	20	81	85	+	+	+	72	78	86	88	+	46	56	70	74	87	
	10	89	+	+	+	+	84	88	+	+	+	56	73	82	85	+	
32	30	84	87	+	+	+	77	81	86	88	+	53	60	70	74	87	
	20	87	+	+	+	+	81	85	+	+	+	61	69	79	83	+	
	10	+	+	+	+	+	89	+	+	+	+	75	82	88	+	+	
28	30	+	+	+	+	+	85	88	+	+	+	68	73	81	84	+	
	20	+	+	+	+	+	88	+	+	+	+	74	79	87	89	+	
	10	+	+	+	+	+	+	+	+	+	+	85	88	+	+	+	

+ = GREATER THAN 90% - = LESS THAN 10%

Didapatkan Jarak Tangan: 7.4 inchi (yang terletak diantara 7 inchi dan 10 inchi), Berat Benda: 39.21 pound (terletak diantara 36 pound dan 40 pound), Frekuensi Pengangkatannya: 4 jam sekali (terletak diantara 5 menit dan 8 jam), dan Jarak Pengangkatannya: 24.72 inchi (Terletak diantara 20 inchi dan 30 inchi). Berikut ini merupakan hasil interpolasinya:

Untuk Berat 36 lb, Jarak Tangan 7 Inchi, Jarak Pengangkatan 30 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 89}{90 - x}$$

$$7.917(90 - x) = 4(1)$$

$$712.53 - 7.917x = 4$$

$$-7.917x = 4 - 712.53$$

$$x = \frac{708.53}{7.917} = 89.4948\%$$

Untuk Berat 36 lb, Jarak Tangan 7 Inchi, Jarak Pengangkatan 20 inchi: Hasilnya bertanda + maka dianggap memiliki nilai **90%**.

Untuk Berat 36 lb, Jarak Tangan 10 Inchi, Jarak Pengangkatan 30 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 83}{90 - x}$$

$$7.917(90 - x) = 4(7)$$

$$712.53 - 7.917x = 28$$

$$-7.917x = 28 - 712.53$$

$$x = \frac{684.53}{7.917} = 86.4633\%$$

Untuk Berat 36 lb, Jarak Tangan 10 Inchi, Jarak Pengangkatan 20 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 88}{90 - x}$$

$$7.917(90 - x) = 4(2)$$

$$712.53 - 7.917x = 8$$

$$-7.917x = 8 - 712.53$$

$$x = \frac{704.53}{7.917} = 88.9895\%$$

Untuk Berat 40 lb, Jarak Tangan 7 Inchi, Jarak Pengangkatan 30 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 84}{90 - x}$$

$$7.917(90 - x) = 4(6)$$

$$712.53 - 7.917x = 24$$

$$-7.917x = 24 - 712.53$$

$$x = \frac{688.53}{7.917} = 86.9685\%$$

Untuk Berat 40 lb, Jarak Tangan 7 Inchi, Jarak Pengangkatan 20 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 89}{90 - x}$$

$$7.917(90 - x) = 4(1)$$

$$712.53 - 7.917x = 4$$

$$-7.917x = 4 - 712.53$$

$$x = \frac{708.53}{7.917} = 89.4948\%$$

Untuk Berat 40 lb, Jarak Tangan 10 Inchi, Jarak Pengangkatan 30 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{87 - 76}{87 - x}$$

$$7.917(87 - x) = 4(11)$$

$$688.779 - 7.917x = 44$$

$$-7.917x = 44 - 688.779$$

$$x = \frac{644.779}{7.917} = 81.4423\%$$

Untuk Berat 40 lb, Jarak Tangan 10 Inchi, Jarak Pengangkatan 20 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 84}{90 - x}$$

$$7.917(90 - x) = 4(6)$$

$$712.53 - 7.917x = 24$$

$$-7.917x = 24 - 712.53$$

$$x = \frac{688.53}{7.917} = 86.9685\%$$

Untuk Berat 36 lb, Jarak Tangan 7 Inchi:

$$\frac{30 - 20}{30 - 24.72} = \frac{89.4948 - 90}{89.4948 - x}$$

$$10(89.4948 - x) = 5.28(-0.5052)$$

$$894.948 - 10x = -2.6675$$

$$-10x = -2.6675 - 894.948$$

$$x = \frac{897.6155}{10} = 89.7616\%$$

Untuk Berat 36 lb, Jarak Tangan 10 Inchi:

$$\frac{30 - 20}{30 - 24.72} = \frac{86.4633 - 88.9895}{86.4633 - x}$$

$$10(86.4633 - x) = 5.28(-2.5262)$$

$$864.633 - 10x = -13.3383$$

$$-10x = -13.3383 - 864.633$$

$$x = \frac{877.9713}{10} = 87.7971\%$$

Untuk Berat 40 lb, Jarak Tangan 7 Inchi:

$$\frac{30 - 20}{30 - 24.72} = \frac{86.9685 - 89.4948}{86.9685 - x}$$

$$10(86.9685 - x) = 5.28(-2.5263)$$

$$869.685 - 10x = -13.3389$$

$$-10x = -13.3389 - 869.685$$

$$x = \frac{883.0239}{10} = 88.3024\%$$

Untuk Berat 40 lb, Jarak Tangan 10 Inchi:

$$\frac{30 - 20}{30 - 24.72} = \frac{81.4423 - 86.9685}{81.4423 - x}$$

$$10(81.4423 - x) = 5.28(-5.5262)$$

$$814.423 - 10x = -29.1783$$

$$-10x = -29.1783 - 814.423$$

$$x = \frac{843.6013}{10} = 84.3601\%$$

Untuk Berat 36 lb:

$$\frac{10 - 7}{10 - 7.4} = \frac{87.7971 - 89.7616}{87.7971 - x}$$

$$3(87.7971 - x) = 2.6(-1.9645)$$

$$263.3913 - 3x = -5.1077$$

$$-3x = -5.1077 - 263.3913$$

$$x = \frac{268.499}{3} = 89.4997\%$$

Untuk Berat 40 lb:

$$\frac{10 - 7}{10 - 7.4} = \frac{84.3601 - 88.3024}{84.3601 - x}$$

$$3(84.3601 - x) = 2.6(-3.9423)$$

$$253.0803 - 3x = -10.25$$

$$-3x = -10.25 - 253.0803$$

$$x = \frac{263.3303}{3} = 87.7768\%$$

Interpolasi Akhir:

$$\frac{40 - 36}{40 - 39.21} = \frac{87.7768 - 89.4997}{87.7768 - x}$$

$$4(87.7768 - x) = 0.79(-1.7229)$$

$$351.1072 - 4x = -1.3611$$

$$-4x = -1.3611 - 351.1072$$

$$x = \frac{352.4683}{4} = 88.1171\%$$

8. Untuk Gerakan Membawa (*Carrying*) Kardus Berisi Produk Hasil Gergaji Kecil dan *Drilling* dari Stasiun Gergaji Kecil dan *Drilling* menuju Stasiun Gerinda:

TABLE 11M - MALE POPULATION PERCENTAGES FOR CARRYING TASKS

CARRYING DISTANCE		7 FEET					14 FEET					28 FEET					
		15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h	
OBJECT WEIGHT (POUNDS)	99	43	-	-	-	18	50	-	-	-	-	36	-	-	-	-	22
		33	-	11	22	36	67	-	-	11	21	54	-	-	-	15	47
	94	43	-	-	12	23	56	-	-	-	12	42	-	-	-	-	28
		33	-	15	28	42	71	-	-	15	27	60	-	-	11	20	53
	89	43	-	-	17	29	62	-	-	-	17	49	-	-	-	-	34
		33	14	20	35	49	75	-	-	21	34	65	-	15	16	26	59
	85	43	-	-	22	35	66	-	-	11	21	54	-	-	-	-	40
		33	18	25	40	54	78	-	-	26	39	70	-	19	20	32	64
	81	43	-	14	27	41	70	-	-	15	27	60	-	-	-	14	46
		33	23	31	46	59	81	-	13	31	45	73	11	24	25	38	68
	77	43	13	19	33	47	74	-	-	20	33	65	-	-	-	19	52
		33	29	37	52	64	84	-	17	38	51	77	15	30	31	44	73
	73	43	18	25	40	53	78	-	-	26	39	69	-	13	14	25	58
		33	35	44	58	69	86	11	23	44	57	80	21	37	38	50	76
	69	43	24	32	46	59	81	-	13	32	46	74	-	18	19	31	63
		33	42	50	64	74	88	16	29	51	63	83	27	44	45	57	80
	65	43	31	39	53	65	84	-	19	40	53	78	-	25	26	38	69
		33	49	57	69	78	+	22	37	58	69	86	34	51	52	63	83
	61	43	39	47	60	71	87	13	26	47	60	82	16	32	34	46	74
		33	57	64	74	82	+	29	44	64	74	88	42	58	59	69	86
57	43	47	55	67	76	89	19	34	55	67	85	23	41	42	54	79	
	33	64	70	79	85	+	37	52	70	78	+	50	65	66	74	88	
53	43	56	62	73	80	+	27	43	63	73	88	31	50	51	62	83	
	33	70	75	83	88	+	46	60	76	83	+	58	71	72	79	+	
49	43	64	70	78	84	+	37	52	70	78	+	41	58	59	69	86	
	33	76	80	86	+	+	55	68	81	86	+	66	77	78	83	+	
45	43	71	76	83	88	+	47	61	76	83	+	51	67	68	76	89	
	33	81	85	89	+	+	64	75	85	89	+	73	82	82	87	+	
41	43	78	82	87	+	+	58	70	82	87	+	61	74	75	82	+	
	33	86	88	+	+	+	72	81	88	+	+	80	86	87	+	+	
36	43	85	87	+	+	+	70	79	88	+	+	73	82	83	87	+	
	33	+	+	+	+	+	81	87	+	+	+	86	+	+	+	+	
31	43	+	+	+	+	+	81	87	+	+	+	82	89	89	+	+	
	33	+	+	+	+	+	88	+	+	+	+	+	+	+	+	+	

+ = GREATER THAN 90% - = LESS THAN 10%

> 28

Didapatkan Ketinggian Tangannya saat memulai adalah 33.98 inchi, Jarak Membawanya adalah 65.12 Feet, dan Berat beban yang dibawa adalah 39.21 pound. Jika dilihat dari tabel, jarak maksimum yang dihitung pada tabel adalah 25 Feet, karena jarak yang ada antara Stasiun Gergaji Kecil dan *Drilling* dan Stasiun Gerinda adalah 65.12 Feet maka hasilnya melebihi batas yang dianjurkan sehingga dianggap nilai presentase populasi yang diperbolehkan melakukan aktivitas tersebut adalah kurang dari 10%.

9. Untuk Gerakan Mengangkat (*Lifting*) Kardus Berisi Kayu Hasil Gerinda dari Lantai:

TABLE 2M - MALE POPULATION PERCENTAGES FOR LIFTING TASKS
ENDING BETWEEN KNUCKLE AND SHOULDER HEIGHT (≥31" AND ≤57")

HAND DISTANCE		7 INCHES					10 INCHES					15 INCHES								
		15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h				
OBJECT WEIGHT (POUNDS)	LIFTING DISTANCE (INCHES)	30	-	-	-	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		20	-	-	-	25	-	-	-	-	12	-	-	-	-	-	-	-	-	-
		10	-	-	16	21	46	-	-	-	30	-	-	-	-	-	-	-	-	-
		30	-	-	-	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		20	-	-	-	30	-	-	-	-	16	-	-	-	-	-	-	-	-	-
		10	-	-	20	26	52	-	-	-	13	36	-	-	-	-	-	-	-	-
		30	-	-	-	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		20	-	-	-	36	-	-	-	-	21	-	-	-	-	-	-	-	-	-
		10	-	11	25	32	57	-	-	12	17	42	-	-	-	-	-	-	-	13
		30	-	-	-	27	-	-	-	-	13	-	-	-	-	-	-	-	-	-
		20	-	-	12	17	42	-	-	-	26	-	-	-	-	-	-	-	-	-
		10	-	15	31	38	63	-	-	17	22	48	-	-	-	-	-	-	-	17
		30	-	-	-	11	33	-	-	-	-	19	-	-	-	-	-	-	-	-
		20	-	-	17	23	49	-	-	-	11	32	-	-	-	-	-	-	-	-
		10	12	20	38	44	68	-	-	22	28	54	-	-	-	-	-	-	-	23
		30	-	-	-	11	16	40	-	-	-	24	-	-	-	-	-	-	-	-
		20	-	-	23	29	55	-	-	11	15	39	-	-	-	-	-	-	-	11
		10	17	26	45	51	72	-	-	13	29	35	60	-	-	-	-	-	-	29
		30	-	-	16	21	47	-	-	-	-	31	-	-	-	-	-	-	-	-
		20	-	14	30	36	61	-	-	16	21	47	-	-	-	-	-	-	-	16
10	23	33	52	58	77	11	19	36	42	66	-	-	-	-	-	-	-	13		
30	-	11	22	28	54	-	-	-	15	39	-	-	-	-	-	-	-	11		
20	12	20	37	44	67	-	-	22	28	54	-	-	-	-	-	-	-	23		
10	30	41	59	64	81	16	25	43	50	72	-	-	14	19	44	-	-	-		
30	12	17	30	36	61	-	-	16	21	47	-	-	-	-	-	-	-	16		
20	18	27	45	52	73	-	-	14	29	36	61	-	-	-	-	-	-	30		
10	38	49	65	70	84	23	33	51	57	77	-	-	20	26	52	-	-	-		
30	18	25	38	45	68	-	-	12	23	29	55	-	-	-	-	-	-	24		
20	25	35	54	60	78	13	20	38	44	68	-	-	-	-	15	39	-	-		
10	47	57	72	76	87	31	42	59	64	81	-	-	13	28	34	60	-	-		
30	26	33	48	54	74	13	19	32	38	63	-	-	-	-	-	-	-	32		
20	34	45	62	67	83	20	29	47	53	74	-	-	-	17	22	48	-	-		
10	56	65	77	81	+	41	51	67	71	85	13	20	37	44	67	-	-	-		
30	36	43	57	63	80	21	28	41	48	70	-	-	13	17	42	-	-	-		
20	44	54	69	74	86	28	39	56	62	80	-	-	11	25	31	57	-	-		
10	64	72	82	85	+	50	60	73	77	88	20	29	47	53	74	-	-	-		
30	46	54	66	71	85	31	38	52	58	77	-	-	11	21	27	53	-	-		
20	54	63	76	80	+	39	49	65	70	84	12	19	36	42	66	-	-	-		
10	72	78	86	88	+	60	68	80	83	+	30	40	57	63	80	-	-	-		
30	57	64	74	78	88	42	50	62	67	83	14	19	32	38	63	-	-	-		
20	64	72	82	85	+	51	60	74	77	88	20	29	47	53	74	-	-	-		
10	79	84	+	+	+	69	76	85	87	+	42	51	67	71	85	-	-	-		
30	68	73	81	84	+	55	61	72	76	87	24	31	44	51	72	-	-	-		
20	73	79	87	89	+	62	70	81	84	+	32	42	59	64	81	-	-	-		
10	85	88	+	+	+	77	82	89	+	+	54	63	75	79	89	-	-	-		
30	77	81	87	89	+	66	72	80	83	+	38	45	58	63	80	-	-	-		
20	81	85	+	+	+	72	78	86	88	+	46	56	70	74	87	-	-	-		
10	89	+	+	+	+	84	88	+	+	+	66	73	82	85	+	-	-	-		
30	84	87	+	+	+	77	81	86	88	+	53	60	70	74	87	-	-	-		
20	87	+	+	+	+	81	85	+	+	+	61	69	79	83	+	-	-	-		
10	+	+	+	+	+	89	+	+	+	+	76	82	88	+	+	-	-	-		
30	+	+	+	+	+	85	88	+	+	+	68	73	81	84	+	-	-	-		
20	+	+	+	+	+	88	+	+	+	+	74	79	87	89	+	-	-	-		
10	+	+	+	+	+	+	+	+	+	+	85	88	+	+	+	-	-	-		

+ = GREATER THAN 90% - = LESS THAN 10%

Didapatkan Jarak Tangan: 7.83 inchi (yang terletak diantara 7 inchi dan 10 inchi), Berat Benda: 43.61 pound (terletak diantara 40 pound dan 44 pound), Frekuensi Pengangkatannya: 4 jam sekali (terletak diantara 5 menit dan 8 jam), dan Jarak Pengangkatannya: 25.75 inchi (Terletak diantara 20 inchi dan 30 inchi). Berikut ini merupakan hasil interpolasinya:

Untuk Berat 40 lb, Jarak Tangan 7 Inchi, Jarak Pengangkatan 30 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 84}{90 - x}$$

$$7.917(90 - x) = 4(6)$$

$$712.53 - 7.917x = 24$$

$$-7.917x = 24 - 712.53$$

$$x = \frac{688.53}{7.917} = 86.9685\%$$

Untuk Berat 40 lb, Jarak Tangan 7 Inchi, Jarak Pengangkatan 20 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 89}{90 - x}$$

$$7.917(90 - x) = 4(1)$$

$$712.53 - 7.917x = 4$$

$$-7.917x = 4 - 712.53$$

$$x = \frac{708.53}{7.917} = 89.4948\%$$

Untuk Berat 40 lb, Jarak Tangan 10 Inchi, Jarak Pengangkatan 30 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{87 - 76}{87 - x}$$

$$7.917(87 - x) = 4(11)$$

$$688.779 - 7.917x = 44$$

$$-7.917x = 44 - 688.779$$

$$x = \frac{644.779}{7.917} = 81.4423\%$$

Untuk Berat 40 lb, Jarak Tangan 10 Inchi, Jarak Pengangkatan 20 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 84}{90 - x}$$

$$7.917(90 - x) = 4(6)$$

$$712.53 - 7.917x = 24$$

$$-7.917x = 24 - 712.53$$

$$x = \frac{688.53}{7.917} = 86.9685\%$$

Untuk Berat 44 lb, Jarak Tangan 7 Inchi, Jarak Pengangkatan 30 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{88 - 78}{86 - x}$$

$$7.917(88 - x) = 4(10)$$

$$696.696 - 7.917x = 40$$

$$-7.917x = 40 - 696.696$$

$$x = \frac{656.696}{7.917} = 82.9476\%$$

Untuk Berat 44 lb, Jarak Tangan 7 Inchi, Jarak Pengangkatan 20 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 85}{90 - x}$$

$$7.917(90 - x) = 4(5)$$

$$712.53 - 7.917x = 20$$

$$-7.917x = 20 - 712.53$$

$$x = \frac{692.53}{7.917} = 87.4738\%$$

Untuk Berat 44 lb, Jarak Tangan 10 Inchi, Jarak Pengangkatan 30 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{83 - 67}{83 - x}$$

$$7.917(83 - x) = 4(16)$$

$$657.111 - 7.917x = 64$$

$$-7.917x = 64 - 657.111$$

$$x = \frac{593.111}{7.917} = 74.9161\%$$

Untuk Berat 44 lb, Jarak Tangan 10 Inchi, Jarak Pengangkatan 20 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{88 - 77}{88 - x}$$

$$7.917(88 - x) = 4(11)$$

$$696.696 - 7.917x = 44$$

$$-7.917x = 44 - 696.696$$

$$x = \frac{652.696}{7.917} = 82.4423\%$$

Untuk Berat 40 lb, Jarak Tangan 7 Inchi:

$$\frac{30 - 20}{30 - 25.75} = \frac{86.9685 - 89.4948}{86.9685 - x}$$

$$10(86.9685 - x) = 4.25(-2.5263)$$

$$869.685 - 10x = -10.7368$$

$$-10x = -10.7368 - 869.685$$

$$x = \frac{880.4218}{10} = 88.0422\%$$

Untuk Berat 40 lb, Jarak Tangan 10 Inchi:

$$\frac{30 - 20}{30 - 25.75} = \frac{81.4423 - 86.9685}{81.4423 - x}$$

$$10(81.4423 - x) = 4.25(-5.5262)$$

$$814.423 - 10x = -23.4864$$

$$-10x = -23.4864 - 814.423$$

$$x = \frac{837.9094}{10} = 83.7909\%$$

Untuk Berat 44 lb, Jarak Tangan 7 Inchi:

$$\frac{30 - 20}{30 - 25.75} = \frac{82.9476 - 87.4738}{82.9476 - x}$$

$$10(82.9476 - x) = 4.25(-4.5262)$$

$$829.476 - 10x = -19.2364$$

$$-10x = -19.2364 - 829.476$$

$$x = \frac{848.7124}{10} = 84.8712\%$$

Untuk Berat 44 lb, Jarak Tangan 10 Inchi:

$$\frac{30 - 20}{30 - 25.75} = \frac{74.9162 - 82.4423}{74.9162 - x}$$

$$10(74.9162 - x) = 4.25(-2.5263)$$

$$749.162 - 10x = -31.9864$$

$$-10x = -31.9864 - 749.162$$

$$x = \frac{781.1474}{10} = 78.1147\%$$

Untuk Berat 40 lb:

$$\frac{10 - 7}{10 - 7.83} = \frac{83.7909 - 88.0422}{83.7909 - x}$$

$$3(83.7909 - x) = 2.17(-4.2513)$$

$$251.3727 - 3x = -9.2253$$

$$-3x = -9.2253 - 251.3727$$

$$x = \frac{260.598}{3} = 86.866\%$$

Untuk Berat 44 lb:

$$\frac{10 - 7}{10 - 7.83} = \frac{78.1147 - 84.8712}{78.1147 - x}$$

$$3(78.1147 - x) = 2.17(-6.7565)$$

$$234.3441 - 3x = -14.6616$$

$$-3x = -14.6616 - 234.3441$$

$$x = \frac{249.0057}{3} = 83.0019\%$$

Interpolasi Akhir:

$$\frac{44 - 40}{44 - 43.61} = \frac{83.0019 - 86.866}{83.0019 - x}$$

$$4(83.0019 - x) = 0.39(-3.8641)$$

$$332.0076 - 4x = -1.507$$

$$-4x = -1.507 - 332.0076$$

$$x = \frac{332.0076}{4} = 83.3787\%$$

10. Untuk Gerakan Membawa (*Carrying*) Kardus Berisi Produk Hasil Gerinda dari Stasiun Gerinda menuju Stasiun Pola:

TABLE 11M - MALE POPULATION PERCENTAGES FOR CARRYING TASKS

CARRYING DISTANCE		7 FEET					14 FEET					28 FEET					
		15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h	
OBJECT WEIGHT (POUNDS)	99	43	-	-	18	50	-	-	-	-	36	-	-	-	-	22	
		33	-	11	22	36	67	-	-	11	21	54	-	-	-	15	47
	94	43	-	-	12	23	56	-	-	-	12	42	-	-	-	-	28
		33	-	15	28	42	71	-	-	15	27	60	-	-	11	20	53
	89	43	-	-	17	29	62	-	-	-	17	49	-	-	-	-	34
		33	14	20	35	49	75	-	-	21	34	65	-	15	16	26	59
	85	43	-	-	22	35	66	-	-	11	21	54	-	-	-	-	40
		33	18	25	40	54	78	-	-	26	39	70	-	19	20	32	64
	81	43	-	14	27	41	70	-	-	15	27	60	-	-	-	14	46
		33	23	31	46	59	81	-	13	31	45	73	11	24	25	38	68
	77	43	13	19	33	47	74	-	-	20	33	65	-	-	-	19	52
		33	29	37	52	64	84	-	17	38	51	77	15	30	31	44	73
	73	43	18	25	40	53	78	-	-	26	39	69	-	13	14	25	58
		33	35	44	58	69	86	11	23	44	57	80	21	37	38	50	76
	69	43	24	32	46	59	81	-	13	32	46	74	-	18	19	31	63
		33	42	50	64	74	88	16	29	51	63	83	27	44	45	57	80
	65	43	31	39	53	65	84	-	19	40	53	78	-	25	26	38	69
		33	49	57	69	78	+	22	37	58	69	86	34	51	52	63	83
	61	43	39	47	60	71	87	13	26	47	60	82	16	32	34	46	74
		33	57	64	74	82	+	29	44	64	74	88	42	58	59	69	86
57	43	47	55	67	76	89	19	34	55	67	85	23	41	42	54	79	
	33	64	70	79	85	+	37	52	70	78	+	50	65	66	74	88	
53	43	56	62	73	80	+	27	43	63	73	88	31	50	51	62	83	
	33	70	75	83	88	+	46	60	76	83	+	58	71	72	79	+	
49	43	64	70	78	84	+	37	52	70	78	+	41	58	59	69	86	
	33	76	80	86	+	+	55	68	81	85	+	66	77	78	83	+	
45	43	71	76	83	88	+	47	61	76	83	+	51	67	68	76	89	
	33	81	85	89	+	+	64	75	85	89	+	73	82	82	87	+	
41	43	78	82	87	+	+	58	70	82	87	+	61	74	75	82	+	
	33	86	88	+	+	+	72	81	88	+	+	80	86	87	+	+	
36	43	85	87	+	+	+	70	79	88	+	+	73	82	83	87	+	
	33	+	+	+	+	+	81	87	+	+	+	86	+	+	+	+	
31	43	+	+	+	+	+	81	87	+	+	+	82	89	89	+	+	
	33	+	+	+	+	+	88	+	+	+	+	+	+	+	+	+	

+ = GREATER THAN 90% - = LESS THAN 10%

Didapatkan Ketinggian Tangannya saat memulai adalah 35.71 inchi (terletak diantara 33 inchi dan 43 inchi), Jarak Membawanya adalah 10.66 Feet (terletak diantara 7 Feet dan 14 Feet), dan Berat beban yang dibawa adalah 43.61 pound (terletak diantara 41 lb dan 45 lb). Dengan frekuensi membawanya 4 jam sekali (terletak diantara 5 menit dan 8 jam). Berikut ini merupakan hasil interpolasinya:

Untuk berat 41 lb, Jarak Membawa: 7 Feet: 90%.

Untuk berat 41 lb, Jarak Membawa: 14 Feet, Ketinggian Tangan: 43 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 87}{90 - x}$$

$$7.917(90 - x) = 4(3)$$

$$712.53 - 7.917x = 12$$

$$-7.917x = 12 - 712.53$$

$$x = \frac{700.53}{7.917} = 88.4843\%$$

Untuk berat 41 lb, Jarak Membawa: 14 Feet, Ketinggian Tangan: 33 inchi: 90%.

Untuk berat 45 lb, Jarak Membawa: 7 Feet, Ketinggian Tangan: 33 inchi: 90%.

Untuk berat 45 lb, Jarak Membawa: 7 Feet, Ketinggian Tangan: 43 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 88}{90 - x}$$

$$7.917(90 - x) = 4(2)$$

$$712.53 - 7.917x = 8$$

$$-7.917x = 8 - 712.53$$

$$x = \frac{704.53}{7.917} = 88.9895\%$$

Untuk berat 45 lb, Jarak Membawa: 14 Feet, Ketinggian Tangan: 43 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 83}{90 - x}$$

$$7.917(90 - x) = 4(7)$$

$$712.53 - 7.917x = 14$$

$$-7.917x = 14 - 712.53$$

$$x = \frac{684.53}{7.917} = 86.4633\%$$

Untuk berat 45 lb, Jarak Membawa: 14 Feet, Ketinggian Tangan: 33 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 89}{90 - x}$$

$$7.917(90 - x) = 4(1)$$

$$712.53 - 7.917x = 4$$

$$-7.917x = 4 - 712.53$$

$$x = \frac{708.53}{7.917} = 89.4948\%$$

Untuk berat 41 lb, Jarak Membawa: 14 Feet:

$$\frac{43 - 33}{43 - 35.71} = \frac{88.4843 - 90}{88.4843 - x}$$

$$10(88.4843 - x) = 7.29(-1.5157)$$

$$884.843 - 10x = -11.0495$$

$$-10x = -11.0495 - 884.843$$

$$x = \frac{895.8925}{10} = 89.5893\%$$

Untuk berat 45 lb, Jarak Membawa: 7 Feet:

$$\frac{43 - 33}{43 - 35.71} = \frac{88.9895 - 90}{88.9895 - x}$$

$$10(88.9895 - x) = 7.29(-1.0105)$$

$$889.895 - 10x = -7.3665$$

$$-10x = -7.3665 - 889.895$$

$$x = \frac{897.2615}{10} = 89.7262\%$$

Untuk berat 45 lb, Jarak Membawa: 14 Feet:

$$\frac{43 - 33}{43 - 35.71} = \frac{86.4633 - 89.4948}{86.4633 - x}$$

$$10(86.4633 - x) = 7.29(-3.0315)$$

$$864.633 - 10x = -22.0996$$

$$-10x = -22.0996 - 864.633$$

$$x = \frac{886.7326}{10} = 88.6733\%$$

Untuk Berat 41 lb:

$$\frac{14 - 7}{14 - 10.66} = \frac{89.5893 - 90}{89.5893 - x}$$

$$7(89.5893 - x) = 3.34(-0.4107)$$

$$627.1251 - 7x = -1.3717$$

$$-7x = -1.3717 - 627.1251$$

$$x = \frac{628.4968}{7} = 89.7853\%$$

Untuk Berat 45 lb:

$$\frac{14 - 7}{14 - 10.66} = \frac{88.6733 - 89.7262}{88.6733 - x}$$

$$7(88.6733 - x) = 3.34(-1.0529)$$

$$620.7131 - 7x = -3.5167$$

$$-7x = -3.5167 - 620.7131$$

$$x = \frac{624.2298}{7} = 89.1757\%$$

Interpolasi Akhir:

$$\frac{45 - 41}{45 - 43.61} = \frac{89.1757 - 89.7853}{89.1757 - x}$$

$$4(89.1757 - x) = 1.39(-0.6096)$$

$$356.7028 - 4x = -0.8473$$

$$-4x = -0.8473 - 356.7028$$

$$x = \frac{357.5501}{4} = 89.3875\%$$

11. Untuk Gerakan Mengangkat (*Lifting*) Kardus Berisi Kayu Hasil Pola dari Lantai:

TABLE 2M - MALE POPULATION PERCENTAGES FOR LIFTING TASKS
ENDING BETWEEN KNUCKLE AND SHOULDER HEIGHT (≥31" AND ≤57")

HAND DISTANCE	7 INCHES					10 INCHES					15 INCHES						
	15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h		
OBJECT WEIGHT (POUNDS)	LIFTING DISTANCE (INCHES)	96	30	-	-	-	-	12	-	-	-	-	-	-	-	-	
		20	-	-	-	-	25	-	-	-	-	12	-	-	-	-	
		10	-	-	16	21	46	-	-	-	-	30	-	-	-	-	
		92	30	-	-	-	16	-	-	-	-	-	-	-	-	-	
		20	-	-	-	-	30	-	-	-	-	16	-	-	-	-	
		10	-	-	20	26	52	-	-	-	13	36	-	-	-	-	
		88	30	-	-	-	21	-	-	-	-	-	-	-	-	-	
		20	-	-	-	13	36	-	-	-	-	21	-	-	-	-	
		10	-	11	25	32	57	-	-	12	17	42	-	-	-	-	
		84	30	-	-	-	27	-	-	-	-	13	-	-	-	-	
		20	-	-	12	17	42	-	-	-	-	26	-	-	-	-	
		10	-	15	31	38	63	-	-	17	22	48	-	-	-	17	
		80	30	-	-	-	11	33	-	-	-	18	-	-	-	-	
		20	-	-	17	23	49	-	-	-	11	32	-	-	-	-	
		10	12	20	38	44	68	-	-	22	28	54	-	-	-	23	
76	30	-	-	11	16	40	-	-	-	24	-	-	-	-			
20	-	-	23	29	55	-	-	11	15	39	-	-	-	11			
10	17	26	45	51	72	-	-	13	29	35	60	-	-	29			
72	30	-	-	16	21	47	-	-	-	31	-	-	-	-			
20	-	14	30	36	61	-	-	16	21	47	-	-	-	16			
10	23	33	52	58	77	11	19	36	42	66	-	-	-	13			
68	30	-	11	22	28	54	-	-	-	15	39	-	-	-	11		
20	12	20	37	44	67	-	-	-	22	28	54	-	-	-	23		
10	30	41	59	64	81	16	25	43	50	72	-	-	14	19	44		
64	30	12	17	30	36	51	-	-	16	21	47	-	-	-	16		
20	18	27	45	52	73	-	-	14	29	36	61	-	-	-	30		
10	38	49	65	70	84	23	33	51	57	77	-	-	20	26	52		
60	30	18	25	38	45	68	-	-	12	23	29	55	-	-	24		
20	25	35	54	60	78	13	20	38	44	68	-	-	-	15	39		
10	47	57	72	76	87	31	42	59	64	81	-	-	13	28	34	60	
56	30	26	33	48	54	74	13	19	32	38	63	-	-	-	32		
20	34	45	62	67	83	20	29	47	53	74	-	-	-	17	22	48	
10	56	65	77	81	+	41	51	67	71	85	13	20	37	44	67		
52	30	36	43	57	63	80	21	28	41	48	70	-	-	13	17	42	
20	44	54	69	74	86	28	39	56	62	80	-	-	11	25	31	57	
10	64	72	82	85	+	50	60	73	77	88	20	29	47	53	74		
48	30	46	54	66	71	85	31	38	52	58	77	-	-	11	21	27	53
20	54	63	76	80	+	39	49	65	70	84	12	19	36	42	62	66	
10	72	78	86	88	+	60	68	80	83	+	30	40	57	63	80		
44	30	57	64	74	78	88	42	50	62	67	83	14	19	32	38	63	
20	64	72	82	85	+	51	60	74	77	88	20	29	47	53	74		
10	79	84	+	+	+	59	76	85	87	+	42	51	67	71	85		
40	30	68	73	81	84	+	55	61	72	76	87	24	31	44	51	72	
20	73	79	87	89	+	62	70	81	84	+	32	42	59	64	81		
10	85	88	+	+	+	77	82	89	+	+	54	63	75	79	89		
36	30	77	81	87	89	+	66	72	80	83	+	38	45	58	63	80	
20	81	85	+	+	+	72	78	86	88	+	46	56	70	74	87		
10	89	+	+	+	+	84	88	+	+	+	66	73	82	85	+		
32	30	84	87	+	+	+	77	81	86	88	+	53	60	70	74	87	
20	87	+	+	+	+	81	85	+	+	+	61	69	79	83	+		
10	+	+	+	+	+	89	+	+	+	+	76	82	88	+	+		
28	30	+	+	+	+	+	85	88	+	+	+	68	73	81	84	+	
20	+	+	+	+	+	88	+	+	+	+	74	79	87	89	+		
10	+	+	+	+	+	+	+	+	+	+	85	88	+	+	+		

+ = GREATER THAN 90% - = LESS THAN 10%

Didapatkan Jarak Tangan: 7.6 inchi (yang terletak diantara 7 inchi dan 10 inchi), Berat Benda: 63.44 pound (terletak diantara 60 pound dan 64 pound), Frekuensi Pengangkatannya: 8 jam sekali, dan Jarak Pengangkatannya: 19.02 inchi (Terletak diantara 10 inchi dan 20 inchi). Berikut ini merupakan hasil interpolasinya:

Untuk berat 60 lb, Jarak Tangan: 7 Inchi:

$$\frac{20 - 10}{20 - 19.02} = \frac{78 - 87}{78 - x}$$

$$10(78 - x) = 0.98(-11)$$

$$780 - 10x = -10.78$$

$$-10x = -10.78 - 780$$

$$x = \frac{790.78}{10} = 79.078\%$$

Untuk berat 60 lb, Jarak Tangan: 10 Inchi:

$$\frac{20 - 10}{20 - 19.02} = \frac{68 - 81}{68 - x}$$

$$10(68 - x) = 0.98(-13)$$

$$680 - 10x = -12.74$$

$$-10x = -12.74 - 680$$

$$x = \frac{692.74}{10} = 69.274\%$$

Untuk berat 64 lb, Jarak Tangan: 7 Inchi:

$$\frac{20 - 10}{20 - 19.02} = \frac{73 - 84}{73 - x}$$

$$10(73 - x) = 0.98(-11)$$

$$730 - 10x = -10.78$$

$$-10x = -10.78 - 730$$

$$x = \frac{740.78}{10} = 74.078\%$$

Untuk berat 64 lb, Jarak Tangan: 10 Inchi:

$$\frac{20 - 10}{20 - 19.02} = \frac{61 - 77}{61 - x}$$

$$10(61 - x) = 0.98(-16)$$

$$610 - 10x = -15.68$$

$$-10x = -15.68 - 610$$

$$x = \frac{625.68}{10} = 62.568\%$$

Untuk Berat 60 lb:

$$\frac{10 - 7}{10 - 7.6} = \frac{69.274 - 79.078}{69.274 - x}$$

$$3(69.274 - x) = 2.4(-9.804)$$

$$207.822 - 3x = -23.5296$$

$$-3x = -23.5296 - 207.822$$

$$x = \frac{231.3516}{3} = 77.1172\%$$

Untuk Berat 64 lb:

$$\frac{10 - 7}{10 - 7.6} = \frac{62.568 - 74.078}{62.568 - x}$$

$$3(62.568 - x) = 2.4(-11.51)$$

$$187.704 - 3x = -27.624$$

$$-3x = -27.624 - 187.704$$

$$x = \frac{215.328}{3} = 71.776\%$$

Interpolasi Akhir:

$$\frac{64 - 60}{64 - 63.44} = \frac{71.776 - 77.1172}{71.776 - x}$$

$$4(71.776 - x) = 0.56(-5.3412)$$

$$287.104 - 4x = -2.9911$$

$$-4x = -2.9911 - 287.104$$

$$x = \frac{284.0951}{4} = 71.0238\%$$

12. Untuk Gerakan Mendorong (*Pushing*) Gerobak Pengangkut dari Stasiun Pola menuju Stasiun Cat Semprot:

TABLE 8M - MALE POPULATION PERCENTAGES FOR PUSHING TASKS
SUSTAINED FORCE

PUSHING DISTANCE		7 FEET					25 FEET					50 FEET					
		30s	1m	5m	30m	8h	30s	1m	5m	30m	8h	30s	1m	5m	30m	8h	
SUSTAINED PUSHING FORCE (POUNDS)	105	57	-	-	-	23	-	-	-	-	-	-	-	-	-	-	-
		37	-	-	-	11	28	-	-	-	-	-	-	-	-	-	-
		25	-	-	-	-	27	-	-	-	-	-	-	-	-	-	-
	100	57	-	-	12	29	-	-	-	-	11	-	-	-	-	-	-
		37	-	-	12	15	34	-	-	-	-	-	-	-	-	-	-
		25	-	-	11	14	32	-	-	-	-	-	-	-	-	-	-
	95	57	-	-	13	16	35	-	-	-	-	16	-	-	-	-	-
		37	-	-	17	20	40	-	-	-	-	14	-	-	-	-	-
		25	-	-	16	19	39	-	-	-	-	11	-	-	-	-	-
	90	57	-	-	18	22	42	-	-	-	-	21	-	-	-	-	-
		37	-	-	22	26	47	-	-	-	-	20	-	-	-	-	-
		25	-	-	21	25	45	-	-	-	-	16	-	-	-	-	-
	85	57	-	-	24	28	49	-	-	-	11	27	-	-	-	-	-
		37	-	13	29	33	53	-	-	-	-	26	-	-	-	-	-
		25	-	12	28	32	52	-	-	-	-	22	-	-	-	-	-
	80	57	-	14	31	36	56	-	-	13	16	35	-	-	-	-	13
		37	-	18	36	41	60	-	-	12	15	33	-	-	-	-	12
		25	-	17	35	39	59	-	-	-	12	29	-	-	-	-	-
	75	57	-	21	39	44	63	-	-	19	23	43	-	-	-	-	19
		37	13	25	44	49	67	-	-	18	21	41	-	-	-	-	18
25		12	24	43	47	66	-	-	14	17	37	-	-	-	-	14	
70	57	16	29	48	52	69	-	11	27	31	51	-	-	12	15	26	
	37	20	33	53	57	72	-	-	25	29	50	-	-	12	14	24	
	25	19	32	52	55	72	-	-	21	25	45	-	-	-	11	20	
65	57	23	38	57	60	75	-	-	18	36	40	60	-	-	19	23	34
	37	28	43	61	64	78	-	-	16	34	38	58	-	-	18	22	33
	25	27	42	60	63	77	-	-	13	29	34	54	-	-	14	19	28
60	57	33	48	65	68	80	-	-	26	46	50	67	-	12	28	33	43
	37	38	52	69	71	82	-	-	25	44	48	66	-	11	27	31	42
	25	37	51	68	71	82	-	-	21	39	44	63	-	-	23	26	37
55	57	44	58	72	75	85	11	37	56	60	75	-	20	39	43	53	
	37	49	62	76	78	86	14	36	55	58	74	-	19	38	42	52	
	25	47	61	75	77	86	13	31	50	54	71	-	15	33	37	47	
50	57	55	67	79	81	88	20	49	66	69	81	-	32	51	55	62	
	37	59	71	82	83	89	23	47	65	68	80	-	30	50	53	61	
	25	58	70	81	83	89	23	43	61	64	78	-	25	45	49	57	
45	57	66	76	85	86	89	32	61	75	77	86	15	45	62	66	71	
	37	70	78	86	88	89	36	59	74	76	85	19	43	61	65	70	
	25	69	78	86	87	89	35	55	71	73	84	20	38	57	61	67	
40	57	76	83	89	89	89	47	72	82	84	88	28	58	73	76	79	
	37	78	85	89	89	89	50	71	81	83	88	33	57	72	75	78	
	25	78	84	89	89	89	50	67	79	81	88	34	53	69	72	75	
35	57	84	88	89	89	89	62	81	88	89	89	44	71	82	83	85	
	37	85	89	89	89	89	65	80	87	89	89	49	70	81	83	85	
	25	85	89	89	89	89	65	78	86	87	89	50	67	79	81	83	
30	57	89	89	89	89	89	75	88	89	89	89	62	82	88	89	89	
	37	89	89	89	89	89	77	87	89	89	89	66	81	88	89	89	
	25	89	89	89	89	89	77	86	89	89	89	67	79	87	88	88	
25	57	89	89	89	89	89	86	89	89	89	89	77	89	89	89	89	
	37	89	89	89	89	89	87	89	89	89	89	80	89	89	89	89	
	25	89	89	89	89	89	87	89	89	89	89	80	88	89	89	89	
20	57	89	89	89	89	89	89	89	89	89	89	88	89	89	89	89	
	37	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	
	25	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	

>50

+ = GREATER THAN 90% - = LESS THAN 10%

Didapatkan Ketinggian Tangannya saat memulai adalah 44.29 inchi, Jarak Mendorongnya adalah 94.32 Feet, dan Gaya Berkelanjutan yang digunakan untuk Mendorong beban yang ada adalah 63.44 pound. Jika dilihat dari tabel, jarak maksimum yang dihitung pada tabel adalah 50 Feet, karena jarak yang ada antara Stasiun Pola dan Stasiun Cat Semprot adalah 94.32 Feet maka hasilnya melebihi batas yang dianjurkan sehingga dianggap nilai presentase populasi yang diperbolehkan melakukan aktivitas tersebut adalah kurang dari 10%.

13. Untuk Gerakan Mengangkat (*Lifting*) Kardus Berisi Produk Hasil Press dari Lantai:

TABLE 2M - MALE POPULATION PERCENTAGES FOR LIFTING TASKS
ENDING BETWEEN KNUCKLE AND SHOULDER HEIGHT (≥31" AND ≤57")

		HAND DISTANCE	7 INCHES					10 INCHES					15 INCHES				
			15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h
OBJECT WEIGHT (POUNDS)	96	30	-	-	-	-	12	-	-	-	-	-	-	-	-	-	-
		20	-	-	-	-	25	-	-	-	-	12	-	-	-	-	-
		10	-	-	16	21	46	-	-	-	-	30	-	-	-	-	-
	92	30	-	-	-	-	16	-	-	-	-	-	-	-	-	-	-
		20	-	-	-	-	30	-	-	-	-	16	-	-	-	-	-
		10	-	-	20	26	52	-	-	-	13	36	-	-	-	-	-
	88	30	-	-	-	-	21	-	-	-	-	-	-	-	-	-	-
		20	-	-	-	13	36	-	-	-	-	21	-	-	-	-	-
		10	-	11	25	32	57	-	-	12	17	42	-	-	-	-	13
	84	30	-	-	-	-	27	-	-	-	-	13	-	-	-	-	-
		20	-	-	12	17	42	-	-	-	-	26	-	-	-	-	-
		10	-	15	31	38	63	-	-	17	22	48	-	-	-	-	17
	80	30	-	-	-	11	33	-	-	-	-	18	-	-	-	-	-
		20	-	-	17	23	49	-	-	-	11	32	-	-	-	-	-
		10	12	20	38	44	68	-	-	22	28	54	-	-	-	-	23
	76	30	-	-	11	16	40	-	-	-	-	24	-	-	-	-	-
		20	-	-	23	29	55	-	-	11	15	39	-	-	-	-	11
		10	17	26	45	51	72	-	13	29	35	60	-	-	-	-	29
	72	30	-	-	16	21	47	-	-	-	-	31	-	-	-	-	-
		20	-	14	30	36	61	-	-	16	21	47	-	-	-	-	16
		10	23	33	52	58	77	11	19	36	42	66	-	-	-	13	36
	68	30	-	11	22	28	54	-	-	-	15	39	-	-	-	-	11
		20	12	20	37	44	67	-	-	22	28	54	-	-	-	-	23
		10	30	41	59	64	81	16	25	43	50	72	-	-	14	19	44
64	30	12	17	30	36	61	-	-	16	21	47	-	-	-	-	16	
	20	18	27	45	52	73	-	14	29	36	61	-	-	-	-	30	
	10	38	49	65	70	84	23	33	51	57	77	-	-	20	26	52	
60	30	18	25	38	45	68	-	12	23	29	55	-	-	-	-	24	
	20	25	35	54	60	78	-	13	20	38	44	58	-	-	-	15	39
	10	47	57	72	76	87	31	42	59	64	81	-	13	28	34	60	
56	30	26	33	48	54	74	-	13	19	32	38	53	-	-	-	-	32
	20	34	45	62	67	83	-	20	29	47	53	74	-	-	17	22	48
	10	56	65	77	81	90	41	51	67	71	85	13	20	37	44	67	
52	30	36	43	57	63	80	21	28	41	48	70	-	-	13	17	42	
	20	44	54	69	74	86	28	39	55	62	80	-	11	25	31	57	
	10	64	72	82	85	90	50	60	73	77	88	20	29	47	53	74	
48	30	46	54	66	71	85	31	38	52	58	77	-	11	21	27	53	
	20	54	63	76	80	90	39	49	65	70	84	12	19	36	42	66	
	10	72	78	86	88	90	60	68	80	83	90	30	40	57	63	80	
44	30	57	64	74	78	88	42	50	62	67	83	14	19	32	38	63	
	20	64	72	82	85	90	51	60	74	77	88	20	29	47	53	74	
	10	79	84	90	90	90	69	76	85	87	90	42	51	67	71	85	
40	30	68	73	81	84	90	55	61	72	76	87	24	31	44	51	72	
	20	73	79	87	89	90	62	70	81	84	90	32	42	59	64	81	
	10	85	88	90	90	90	77	82	89	90	90	54	63	75	79	89	
36	30	77	81	87	89	90	66	72	80	83	90	38	45	58	63	80	
	20	81	85	90	90	90	72	78	86	88	90	46	56	70	74	87	
	10	89	90	90	90	90	84	88	90	90	90	66	73	82	85	90	
32	30	84	87	90	90	90	77	81	86	88	90	53	60	70	74	87	
	20	87	90	90	90	90	81	85	90	90	90	61	69	79	83	90	
	10	90	90	90	90	90	89	90	90	90	90	76	82	88	90	90	
28	30	90	90	90	90	90	85	88	90	90	90	68	73	81	84	90	
	20	90	90	90	90	90	88	90	90	90	90	74	79	87	89	90	
	10	90	90	90	90	90	90	90	90	90	90	85	88	90	90	90	

+ = GREATER THAN 90% - = LESS THAN 10%

Didapatkan Jarak Tangan: 7.87 inchi (yang terletak diantara 7 inchi dan 10 inchi), Berat Benda: 58.81 pound (terletak diantara 60 pound dan 64 pound), Frekuensi Pengangkatannya: 8 jam sekali, dan Jarak Pengangkatannya: 19.76 inchi (Terletak diantara 10 inchi dan 20 inchi). Berikut ini merupakan hasil interpolasinya:

Untuk berat 56 lb, Jarak Tangan: 7 Inchi:

$$\frac{20 - 10}{20 - 19.76} = \frac{83 - 90}{83 - x}$$

$$10(83 - x) = 0.24(-7)$$

$$830 - 10x = -1.68$$

$$-10x = -1.68 - 830$$

$$x = \frac{831.68}{10} = 83.168\%$$

Untuk berat 56 lb, Jarak Tangan: 10 Inchi:

$$\frac{20 - 10}{20 - 19.76} = \frac{74 - 85}{74 - x}$$

$$10(74 - x) = 0.24(-11)$$

$$740 - 10x = -2.64$$

$$-10x = -2.64 - 740$$

$$x = \frac{742.64}{10} = 74.264\%$$

Untuk berat 60 lb, Jarak Tangan: 7 Inchi:

$$\frac{20 - 10}{20 - 19.76} = \frac{78 - 87}{78 - x}$$

$$10(78 - x) = 0.24(-11)$$

$$780 - 10x = -2.64$$

$$-10x = -2.64 - 780$$

$$x = \frac{782.64}{10} = 78.264\%$$

Untuk berat 60 lb, Jarak Tangan: 10 Inchi:

$$\frac{20 - 10}{20 - 19.76} = \frac{68 - 81}{68 - x}$$

$$10(68 - x) = 0.24(-13)$$

$$680 - 10x = -3.12$$

$$-10x = -3.12 - 680$$

$$x = \frac{683.12}{10} = 68.312\%$$

Untuk Berat 56 lb:

$$\frac{10 - 7}{10 - 7.87} = \frac{74.264 - 83.168}{74.264 - x}$$

$$3(74.264 - x) = 2.13(-8.904)$$

$$222.792 - 3x = -18.9655$$

$$-3x = -18.9655 - 222.792$$

$$x = \frac{241.7575}{3} = 80.5858\%$$

Untuk Berat 60 lb:

$$\frac{10 - 7}{10 - 7.87} = \frac{68.312 - 78.264}{68.312 - x}$$

$$3(68.312 - x) = 2.13(-9.952)$$

$$204.936 - 3x = -21.1978$$

$$-3x = -21.1978 - 204.936$$

$$x = \frac{226.1338}{3} = 75.3779\%$$

Interpolasi Akhir:

$$\frac{60 - 56}{60 - 58.81} = \frac{75.3779 - 80.5858}{75.3779 - x}$$

$$4(75.3779 - x) = 1.19(-5.2079)$$

$$301.5116 - 4x = -6.1974$$

$$-4x = -6.1974 - 301.5116$$

$$x = \frac{307.709}{4} = 76.9273\%$$

14. Untuk Gerakan Mendorong (*Pushing*) Gerobak Pengangkut dari Stasiun Press menuju Stasiun Cat Kuas:

TABLE 8M - MALE POPULATION PERCENTAGES FOR PUSHING TASKS
SUSTAINED FORCE

PUSHING DISTANCE		7 FEET					25 FEET					50 FEET									
		30s	1m	5m	30m	8h	30s	1m	5m	30m	8h	30s	1m	5m	30m	8h					
SUSTAINED PUSHING FORCE (POUNDS)	105	57	-	-	-	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		37	-	-	-	11	28	-	-	-	-	-	-	-	-	-	-	-	-	-	
		25	-	-	-	-	27	-	-	-	-	-	-	-	-	-	-	-	-	-	
	100	57	-	-	-	12	29	-	-	-	-	11	-	-	-	-	-	-	-	-	
		37	-	-	-	12	34	-	-	-	-	-	-	-	-	-	-	-	-	-	
		25	-	-	-	11	32	-	-	-	-	-	-	-	-	-	-	-	-	-	
	95	57	-	-	-	13	35	-	-	-	-	16	-	-	-	-	-	-	-	-	
		37	-	-	-	17	40	-	-	-	-	14	-	-	-	-	-	-	-	-	
		25	-	-	-	16	39	-	-	-	-	11	-	-	-	-	-	-	-	-	
	90	57	-	-	-	18	42	-	-	-	-	21	-	-	-	-	-	-	-	-	
		37	-	-	-	22	47	-	-	-	-	20	-	-	-	-	-	-	-	-	
		25	-	-	-	21	45	-	-	-	-	16	-	-	-	-	-	-	-	-	
	85	57	-	-	-	24	49	-	-	-	11	27	-	-	-	-	-	-	-	-	
		37	-	-	-	13	53	-	-	-	-	26	-	-	-	-	-	-	-	-	
		25	-	-	-	12	52	-	-	-	-	22	-	-	-	-	-	-	-	-	
	80	57	-	-	-	14	56	-	-	-	13	35	-	-	-	-	-	-	-	13	
		37	-	-	-	18	60	-	-	-	12	33	-	-	-	-	-	-	-	12	
		25	-	-	-	17	59	-	-	-	-	29	-	-	-	-	-	-	-	-	
	75	57	-	-	-	21	63	-	-	-	19	43	-	-	-	-	-	-	-	19	
		37	-	-	-	25	67	-	-	-	18	41	-	-	-	-	-	-	-	18	
25		-	-	-	24	66	-	-	-	-	37	-	-	-	-	-	-	-	14		
70	57	-	-	-	29	69	-	-	-	11	27	31	51	-	-	-	12	15	26		
	37	-	-	-	33	72	-	-	-	-	25	29	50	-	-	-	12	14	24		
	25	-	-	-	32	72	-	-	-	-	21	25	45	-	-	-	-	11	20		
65	57	-	-	-	38	75	-	-	-	18	36	40	60	-	-	-	19	23	34		
	37	-	-	-	43	78	-	-	-	16	34	38	58	-	-	-	18	22	33		
	25	-	-	-	42	77	-	-	-	-	13	29	34	54	-	-	-	14	19	28	
60	57	-	-	-	48	80	-	-	-	26	46	50	67	-	-	-	12	28	43		
	37	-	-	-	52	82	-	-	-	25	44	48	66	-	-	-	11	27	42		
	25	-	-	-	51	82	-	-	-	-	21	39	44	63	-	-	-	23	37		
55	57	-	-	-	58	85	-	-	-	37	56	60	75	-	-	-	20	39	53		
	37	-	-	-	62	86	-	-	-	14	35	55	74	-	-	-	19	38	52		
	25	-	-	-	61	86	-	-	-	13	31	50	71	-	-	-	15	33	47		
50	57	-	-	-	67	88	-	-	-	20	49	66	81	-	-	-	32	51	62		
	37	-	-	-	71	83	-	-	-	23	47	65	80	-	-	-	30	50	61		
	25	-	-	-	70	83	-	-	-	23	43	61	78	-	-	-	25	45	57		
45	57	-	-	-	76	86	-	-	-	32	61	75	86	-	-	-	15	45	66	71	
	37	-	-	-	78	88	-	-	-	36	59	74	85	-	-	-	19	43	61	65	70
	25	-	-	-	78	87	-	-	-	35	55	71	84	-	-	-	20	38	57	61	67
40	57	-	-	-	83	89	-	-	-	47	72	82	84	-	-	-	28	58	73	76	79
	37	-	-	-	85	89	-	-	-	50	71	81	83	-	-	-	33	57	72	75	78
	25	-	-	-	84	89	-	-	-	50	67	79	81	88	-	-	-	34	53	69	72
35	57	-	-	-	84	88	-	-	-	62	81	88	89	-	-	-	44	71	82	83	85
	37	-	-	-	85	89	-	-	-	65	80	87	89	-	-	-	49	70	81	83	85
	25	-	-	-	85	89	-	-	-	65	78	86	87	-	-	-	50	67	79	81	83
30	57	-	-	-	88	90	-	-	-	75	88	90	90	-	-	-	62	82	88	89	90
	37	-	-	-	88	90	-	-	-	77	87	90	90	-	-	-	66	81	88	89	90
	25	-	-	-	88	90	-	-	-	77	86	90	90	-	-	-	67	79	87	88	88
25	57	-	-	-	89	90	-	-	-	86	90	90	90	-	-	-	77	89	90	90	90
	37	-	-	-	89	90	-	-	-	87	90	90	90	-	-	-	80	89	90	90	90
	25	-	-	-	89	90	-	-	-	87	90	90	90	-	-	-	80	88	90	90	90
20	57	-	-	-	90	90	-	-	-	90	90	90	90	-	-	-	88	90	90	90	90
	37	-	-	-	90	90	-	-	-	90	90	90	90	-	-	-	90	90	90	90	90
	25	-	-	-	90	90	-	-	-	90	90	90	90	-	-	-	90	90	90	90	90

>50

Didapatkan Ketinggian Tangannya saat memulai adalah 44.29 inchi, Jarak Mendorongnya adalah 107.45 Feet, dan Gaya Berkelanjutan yang digunakan untuk Mendorong beban yang ada adalah 58.81 pound. Jika dilihat dari tabel, jarak maksimum yang dihitung pada tabel adalah 50 Feet, karena jarak yang ada antara Stasiun Press dan Stasiun Cat Kuas adalah 107.45 Feet maka hasilnya melebihi batas yang dianjurkan sehingga dianggap nilai presentase populasi yang diperbolehkan melakukan aktivitas tersebut adalah kurang dari 10%.

15. Untuk Gerakan Mengangkat (*Lifting*) Kardus Berisi Produk Hasil Cat Semprot dari Lantai:

TABLE 2M - MALE POPULATION PERCENTAGES FOR LIFTING TASKS
ENDING BETWEEN KNUCKLE AND SHOULDER HEIGHT (≥31" AND ≤57")

HAND DISTANCE		7 INCHES					10 INCHES					15 INCHES					
		15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h	
OBJECT WEIGHT (POUNDS)	96	30	-	-	-	12	-	-	-	-	-	-	-	-	-	-	-
		20	-	-	-	25	-	-	-	-	12	-	-	-	-	-	-
		10	-	-	16	21	46	-	-	-	-	30	-	-	-	-	-
	92	30	-	-	-	16	-	-	-	-	-	-	-	-	-	-	-
		20	-	-	-	30	-	-	-	-	16	-	-	-	-	-	-
		10	-	-	20	26	52	-	-	-	13	36	-	-	-	-	-
	88	30	-	-	-	21	-	-	-	-	-	-	-	-	-	-	-
		20	-	-	-	13	36	-	-	-	21	-	-	-	-	-	-
		10	-	11	25	32	57	-	-	12	17	42	-	-	-	-	13
	84	30	-	-	-	27	-	-	-	-	13	-	-	-	-	-	-
		20	-	-	12	17	42	-	-	-	26	-	-	-	-	-	-
		10	-	15	31	38	63	-	-	17	22	48	-	-	-	-	17
	80	30	-	-	-	11	33	-	-	-	18	-	-	-	-	-	-
		20	-	-	17	23	49	-	-	-	11	32	-	-	-	-	-
		10	12	20	38	44	68	-	-	22	28	54	-	-	-	-	23
	76	30	-	-	11	16	40	-	-	-	24	-	-	-	-	-	-
		20	-	-	23	29	55	-	-	11	15	39	-	-	-	-	11
		10	17	26	45	51	72	-	-	13	29	35	60	-	-	-	29
	72	30	-	-	16	21	47	-	-	-	31	-	-	-	-	-	-
		20	-	14	30	36	61	-	-	16	21	47	-	-	-	-	16
		10	23	33	52	58	77	11	19	36	42	66	-	-	-	13	36
	68	30	-	11	22	28	54	-	-	-	15	39	-	-	-	-	11
		20	12	20	37	44	67	-	-	22	28	54	-	-	-	-	23
		10	30	41	59	64	81	16	25	43	50	72	-	-	14	19	44
64	30	12	17	30	36	61	-	-	16	21	47	-	-	-	-	16	
	20	18	27	45	52	73	-	14	29	36	61	-	-	-	-	30	
	10	38	49	65	70	84	23	33	51	57	77	-	-	20	26	52	
60	30	18	25	38	45	68	-	12	23	29	55	-	-	-	-	24	
	20	25	35	54	60	78	13	20	38	44	68	-	-	-	15	39	
	10	47	57	72	76	87	31	42	59	64	81	-	13	28	34	60	
56	30	26	33	48	54	74	13	19	32	38	63	-	-	-	-	32	
	20	34	45	62	67	83	20	29	47	53	74	-	-	17	22	48	
	10	56	65	77	81	+	41	51	67	71	85	13	20	37	44	67	
52	30	36	43	57	63	80	21	28	41	48	70	-	-	13	17	42	
	20	44	54	69	74	86	28	39	55	62	80	-	11	25	31	57	
	10	64	72	82	85	+	50	60	73	77	88	20	29	47	53	74	
48	30	46	54	66	71	85	31	38	52	58	77	-	11	21	27	53	
	20	54	63	76	80	+	39	49	65	70	84	12	19	36	42	66	
	10	72	78	86	88	+	60	68	80	83	+	30	40	57	63	80	
44	30	57	64	74	78	88	42	50	62	67	83	14	19	32	38	63	
	20	64	72	82	85	+	51	60	74	77	88	20	29	47	53	74	
	10	79	84	+	+	+	69	76	85	87	+	42	51	67	71	85	
40	30	68	73	81	84	+	55	61	72	76	87	24	31	44	51	72	
	20	73	79	87	89	+	62	70	81	84	+	32	42	59	64	81	
	10	85	88	+	+	+	77	82	89	+	+	54	63	75	79	89	
36	30	77	81	87	89	+	66	72	80	83	+	38	45	58	63	80	
	20	81	85	+	+	+	72	78	86	88	+	46	56	70	74	87	
	10	89	+	+	+	+	84	88	+	+	+	66	73	82	85	+	
32	30	84	87	+	+	+	77	81	85	88	+	53	60	70	74	87	
	20	87	+	+	+	+	81	85	+	+	+	61	69	79	83	+	
	10	+	+	+	+	+	89	+	+	+	+	76	82	88	+	+	
28	30	+	+	+	+	+	85	88	+	+	+	68	73	81	84	+	
	20	+	+	+	+	+	88	+	+	+	+	74	79	87	89	+	
	10	+	+	+	+	+	+	+	+	+	+	85	88	+	+	+	

+ = GREATER THAN 90% - = LESS THAN 10%

Didapatkan Jarak Tangan: 8.11 inchi (yang terletak diantara 7 inchi dan 10 inchi), Berat Benda: 40.97 pound (terletak diantara 40 pound dan 44 pound), Frekuensi Pengangkatannya: 4 jam sekali (terletak diantara 5 menit dan 8 jam), dan Jarak Pengangkatannya: 23.94 inchi (Terletak diantara 20 inchi dan 30 inchi). Berikut ini merupakan hasil interpolasinya:

Untuk Berat 40 lb, Jarak Tangan 7 Inchi, Jarak Pengangkatan 30 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 84}{90 - x}$$

$$7.917(90 - x) = 4(6)$$

$$712.53 - 7.917x = 24$$

$$-7.917x = 24 - 712.53$$

$$x = \frac{688.53}{7.917} = 86.9685\%$$

Untuk Berat 40 lb, Jarak Tangan 7 Inchi, Jarak Pengangkatan 20 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 89}{90 - x}$$

$$7.917(90 - x) = 4(1)$$

$$712.53 - 7.917x = 4$$

$$-7.917x = 4 - 712.53$$

$$x = \frac{708.53}{7.917} = 89.4948\%$$

Untuk Berat 40 lb, Jarak Tangan 10 Inchi, Jarak Pengangkatan 30 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{87 - 76}{87 - x}$$

$$7.917(87 - x) = 4(11)$$

$$688.779 - 7.917x = 44$$

$$-7.917x = 44 - 688.779$$

$$x = \frac{644.779}{7.917} = 81.4423\%$$

Untuk Berat 40 lb, Jarak Tangan 10 Inchi, Jarak Pengangkatan 20 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 84}{90 - x}$$

$$7.917(90 - x) = 4(6)$$

$$712.53 - 7.917x = 24$$

$$-7.917x = 24 - 712.53$$

$$x = \frac{688.53}{7.917} = 86.9685\%$$

Untuk Berat 44 lb, Jarak Tangan 7 Inchi, Jarak Pengangkatan 30 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{88 - 78}{86 - x}$$

$$7.917(88 - x) = 4(10)$$

$$696.696 - 7.917x = 40$$

$$-7.917x = 40 - 696.696$$

$$x = \frac{656.696}{7.917} = 82.9476\%$$

Untuk Berat 44 lb, Jarak Tangan 7 Inchi, Jarak Pengangkatan 20 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 85}{90 - x}$$

$$7.917(90 - x) = 4(5)$$

$$712.53 - 7.917x = 20$$

$$-7.917x = 20 - 712.53$$

$$x = \frac{692.53}{7.917} = 87.4738\%$$

Untuk Berat 44 lb, Jarak Tangan 10 Inchi, Jarak Pengangkatan 30 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{83 - 67}{83 - x}$$

$$7.917(83 - x) = 4(16)$$

$$657.111 - 7.917x = 64$$

$$-7.917x = 64 - 657.111$$

$$x = \frac{593.111}{7.917} = 74.9161\%$$

Untuk Berat 44 lb, Jarak Tangan 10 Inchi, Jarak Pengangkatan 20 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{88 - 77}{88 - x}$$

$$7.917(88 - x) = 4(11)$$

$$696.696 - 7.917x = 44$$

$$-7.917x = 44 - 696.696$$

$$x = \frac{652.696}{7.917} = 82.4423\%$$

Untuk Berat 40 lb, Jarak Tangan 7 Inchi:

$$\frac{30 - 20}{30 - 23.94} = \frac{86.9685 - 89.4948}{86.9685 - x}$$

$$10(86.9685 - x) = 6.06(-2.5263)$$

$$869.685 - 10x = -15.3094$$

$$-10x = -15.3094 - 869.685$$

$$x = \frac{884.9944}{10} = 88.4994\%$$

Untuk Berat 40 lb, Jarak Tangan 10 Inchi:

$$\frac{30 - 20}{30 - 23.94} = \frac{81.4423 - 86.9685}{81.4423 - x}$$

$$10(81.4423 - x) = 6.06(-5.5262)$$

$$814.423 - 10x = -33.4894$$

$$-10x = -33.4894 - 814.423$$

$$x = \frac{847.9114}{10} = 84.7911\%$$

Untuk Berat 44 lb, Jarak Tangan 7 Inchi:

$$\frac{30 - 20}{30 - 23.94} = \frac{82.9476 - 87.4738}{82.9476 - x}$$

$$10(82.9476 - x) = 6.06(-4.5262)$$

$$829.476 - 10x = -27.4288$$

$$-10x = -27.4288 - 829.476$$

$$x = \frac{856.9048}{10} = 85.6905\%$$

Untuk Berat 44 lb, Jarak Tangan 10 Inchi:

$$\frac{30 - 20}{30 - 23.94} = \frac{74.9162 - 82.4423}{74.9162 - x}$$

$$10(74.9162 - x) = 6.06(-2.5263)$$

$$749.162 - 10x = -45.6088$$

$$-10x = -45.6088 - 749.162$$

$$x = \frac{794.7698}{10} = 79.477\%$$

Untuk Berat 40 lb:

$$\frac{10 - 7}{10 - 8.11} = \frac{84.7911 - 88.4994}{84.7911 - x}$$

$$3(84.7911 - x) = 1.89(-3.7083)$$

$$254.3733 - 3x = -7.0087$$

$$-3x = -7.0087 - 254.3733$$

$$x = \frac{261.382}{3} = 87.1273\%$$

Untuk Berat 44 lb:

$$\frac{10 - 7}{10 - 8.11} = \frac{79.477 - 85.6905}{79.477 - x}$$

$$3(79.477 - x) = 1.89(-6.2135)$$

$$238.431 - 3x = -11.7435$$

$$-3x = -11.7435 - 238.431$$

$$x = \frac{250.1745}{3} = 83.3915\%$$

Interpolasi Akhir:

$$\frac{44 - 40}{44 - 40.97} = \frac{83.3915 - 87.1273}{83.3915 - x}$$

$$4(83.3915 - x) = 3.03(-3.7358)$$

$$333.566 - 4x = -11.3195$$

$$-4x = -11.3195 - 333.566$$

$$x = \frac{344.8855}{4} = 86.2214\%$$

16. Untuk Gerakan Membawa (*Carrying*) Kardus Berisi Produk Akhir Mainan Pola dari Stasiun Cat Semprot menuju Stasiun Packing:

TABLE 11M - MALE POPULATION PERCENTAGES FOR CARRYING TASKS

		CARRYING DISTANCE		7 FEET					14 FEET					28 FEET				
				15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h
OBJECT WEIGHT (POUNDS)	FREQUENCY ONE CARRY EVERY	HAND HEIGHT (INCHES)																
		43	33	31	29	27	25	23	21	19	17	15	13	11	9	7		
99	43	-	-	-	18	50	-	-	-	-	36	-	-	-	-	22		
	33	-	11	22	36	67	-	-	11	21	54	-	-	-	15	47		
94	43	-	-	12	23	56	-	-	-	12	42	-	-	-	-	28		
	33	-	15	28	42	71	-	-	15	27	60	-	-	11	20	53		
89	43	-	-	17	29	62	-	-	-	17	49	-	-	-	-	34		
	33	14	20	35	49	75	-	-	21	34	65	-	15	16	26	59		
85	43	-	-	22	35	66	-	-	11	21	54	-	-	-	-	40		
	33	18	25	40	54	78	-	-	26	39	70	-	19	20	32	64		
81	43	-	14	27	41	70	-	-	15	27	60	-	-	-	14	46		
	33	23	31	46	59	81	-	13	31	45	73	11	24	25	38	68		
77	43	13	19	33	47	74	-	-	20	33	65	-	-	-	19	52		
	33	29	37	52	64	84	-	17	38	51	77	15	30	31	44	73		
73	43	18	25	40	53	78	-	-	26	39	69	-	13	14	25	58		
	33	35	44	58	69	86	11	23	44	57	80	21	37	38	50	76		
69	43	24	32	46	59	81	-	13	32	46	74	-	18	19	31	63		
	33	42	50	64	74	88	16	29	51	63	83	27	44	45	57	80		
65	43	31	39	53	65	84	-	19	40	53	78	-	25	26	38	69		
	33	49	57	69	78	+	22	37	58	69	86	34	51	52	63	83		
61	43	39	47	60	71	87	13	26	47	60	82	16	32	34	46	74		
	33	57	64	74	82	+	29	44	64	74	88	42	58	59	69	86		
57	43	47	55	67	76	89	19	34	55	67	85	23	41	42	54	79		
	33	64	70	79	85	+	37	52	70	78	+	50	65	66	74	88		
53	43	56	62	73	80	+	27	43	63	73	88	31	50	51	62	83		
	33	70	75	83	88	+	46	60	76	83	+	58	71	72	79	+		
49	43	64	70	78	84	+	37	52	70	78	+	41	58	59	69	86		
	33	76	80	86	+	+	55	68	81	86	+	66	77	78	83	+		
45	43	71	76	83	88	+	47	61	76	83	+	51	67	68	76	89		
	33	81	85	89	+	+	64	75	85	89	+	73	82	82	87	+		
41	43	78	82	87	+	+	58	70	82	87	+	61	74	75	82	+		
	33	86	88	+	+	+	72	81	88	+	+	80	86	87	+	+		
36	43	85	87	+	+	+	70	79	88	+	+	73	82	83	87	+		
	33	+	+	+	+	+	81	87	+	+	+	86	+	+	+	+		
31	43	+	+	+	+	+	81	87	+	+	+	82	89	89	+	+		
	33	+	+	+	+	+	88	+	+	+	+	+	+	+	+	+		

+ = GREATER THAN 90% - = LESS THAN 10%

Didapatkan Ketinggian Tangannya saat memulai adalah 37.48 inchi (terletak diantara 33 inchi dan 43 inchi), Jarak Membawanya adalah 20.67 Feet (terletak diantara 14 Feet dan 28 Feet), dan Berat beban yang dibawa adalah 40.97 pound (terletak diantara 36 lb dan 41 lb). Dengan frekuensi membawanya 4 jam sekali (terletak diantara 5 menit dan 8 jam). Berikut ini merupakan hasil interpolasinya:

Untuk berat 36 lb, Jarak Membawa: 14 Feet: 90%.

Untuk berat 36 lb, Jarak Membawa: 28 Feet, Ketinggian Tangan: 43 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 87}{90 - x}$$

$$7.917(90 - x) = 4(3)$$

$$712.53 - 7.917x = 12$$

$$-7.917x = 12 - 712.53$$

$$x = \frac{700.53}{7.917} = 88.4843\%$$

Untuk berat 36 lb, Jarak Membawa: 28 Feet, Ketinggian Tangan: 33 inchi: 90%.

Untuk berat 41 lb, Jarak Membawa: 14 Feet, Ketinggian Tangan: 33 inchi: 90%.

Untuk berat 41 lb, Jarak Membawa: 14 Feet, Ketinggian Tangan: 43 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 87}{90 - x}$$

$$7.917(90 - x) = 4(3)$$

$$712.53 - 7.917x = 12$$

$$-7.917x = 12 - 712.53$$

$$x = \frac{700.53}{7.917} = 88.4843\%$$

Untuk berat 41 lb, Jarak Membawa: 28 Feet, Ketinggian Tangan: 33 inchi: 90%.

Untuk berat 41 lb, Jarak Membawa: 28 Feet, Ketinggian Tangan: 43 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 82}{90 - x}$$

$$7.917(90 - x) = 4(8)$$

$$712.53 - 7.917x = 32$$

$$-7.917x = 32 - 712.53$$

$$x = \frac{680.53}{7.917} = 85.958\%$$

Untuk berat 36 lb, Jarak Membawa: 28 Feet:

$$\frac{43 - 33}{43 - 37.48} = \frac{88.4843 - 90}{88.4843 - x}$$

$$10(88.4843 - x) = 5.52(-1.5157)$$

$$884.843 - 10x = -8.3667$$

$$-10x = -8.3667 - 884.843$$

$$x = \frac{893.2097}{10} = 89.321\%$$

Untuk berat 41 lb, Jarak Membawa: 14 Feet:

$$\frac{43 - 33}{43 - 37.48} = \frac{88.4843 - 90}{88.4843 - x}$$

$$10(88.4843 - x) = 5.52(-1.5157)$$

$$884.843 - 10x = -8.3667$$

$$-10x = -8.3667 - 884.843$$

$$x = \frac{893.2097}{10} = 89.321\%$$

Untuk berat 41 lb, Jarak Membawa: 28 Feet:

$$\frac{43 - 33}{43 - 37.48} = \frac{85.958 - 90}{85.958 - x}$$

$$10(85.958 - x) = 5.52(-4.032)$$

$$859.58 - 10x = -22.2566$$

$$-10x = -22.2566 - 859.58$$

$$x = \frac{881.9366}{10} = 88.1937\%$$

Untuk Berat 36 lb:

$$\frac{28 - 14}{28 - 20.67} = \frac{89.321 - 90}{89.321 - x}$$

$$14(89.321 - x) = 7.33(-0.679)$$

$$1250.494 - 14x = -4.9771$$

$$-14x = -4.9771 - 1250.494$$

$$x = \frac{1255.4711}{14} = 89.6765\%$$

Untuk Berat 41 lb:

$$\frac{28 - 14}{28 - 20.67} = \frac{88.1937 - 89.321}{88.1937 - x}$$

$$14(88.1937 - x) = 7.33(-1.1273)$$

$$1234.7118 - 14x = -8.2631$$

$$-14x = -8.2631 - 1234.7118$$

$$x = \frac{1242.9749}{14} = 88.7839\%$$

Interpolasi Akhir:

$$\frac{41 - 36}{41 - 40.97} = \frac{88.7839 - 89.6765}{88.7839 - x}$$

$$5(88.7839 - x) = 0.03(-0.8926)$$

$$443.9195 - 5x = -0.0268$$

$$-5x = -0.0268 - 443.9195$$

$$x = \frac{443.9463}{5} = 88.7893\%$$

17. Untuk Gerakan Mengangkat (*Lifting*) Kardus Berisi Produk Hasil Cat Kuas dari Lantai:

TABLE 2M - MALE POPULATION PERCENTAGES FOR LIFTING TASKS
 ENDING BETWEEN KNUCKLE AND SHOULDER HEIGHT (≥31" AND ≤57")

		HAND DISTANCE		7 INCHES					10 INCHES					15 INCHES				
				15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h
OBJECT WEIGHT (POUNDS)	LIFTING DISTANCE (INCHES)	FREQUENCY ONE LIFT EVERY																
		30	20	10	30	20	10	30	20	10	30	20	10	30	20	10		
96	30	-	-	-	-	12	-	-	-	-	-	-	-	-	-	-		
	20	-	-	-	-	26	-	-	-	-	-	-	-	-	-	-		
	10	-	-	16	21	46	-	-	-	-	-	30	-	-	-	-		
92	30	-	-	-	-	16	-	-	-	-	-	-	-	-	-	-		
	20	-	-	-	-	30	-	-	-	-	-	-	-	-	-	-		
	10	-	-	20	26	52	-	-	-	-	13	36	-	-	-	-		
88	30	-	-	-	-	21	-	-	-	-	-	-	-	-	-	-		
	20	-	-	-	13	36	-	-	-	-	-	-	21	-	-	-		
	10	-	11	25	32	57	-	-	12	17	42	-	-	-	-	13		
84	30	-	-	-	-	27	-	-	-	-	-	-	-	-	-	-		
	20	-	-	12	17	42	-	-	-	-	-	-	-	-	-	-		
	10	-	15	31	38	63	-	-	17	22	48	-	-	-	-	17		
80	30	-	-	-	11	33	-	-	-	-	-	-	-	-	-	-		
	20	-	-	17	23	49	-	-	-	11	32	-	-	-	-	-		
	10	12	20	38	44	68	-	-	22	28	54	-	-	-	-	23		
76	30	-	-	11	16	40	-	-	-	-	-	-	-	-	-	-		
	20	-	-	23	29	55	-	-	11	15	39	-	-	-	-	11		
	10	17	26	45	51	72	-	-	13	29	56	-	-	-	-	29		
72	30	-	-	16	21	47	-	-	-	-	-	-	-	-	-	-		
	20	-	14	30	36	61	-	-	16	21	47	-	-	-	-	16		
	10	23	33	52	58	77	11	19	36	42	66	-	-	-	13	36		
68	30	-	11	22	28	54	-	-	-	15	39	-	-	-	-	11		
	20	12	20	37	44	67	-	-	22	28	54	-	-	-	-	23		
	10	30	41	59	64	81	16	25	43	50	72	-	-	14	19	44		
64	30	12	17	30	36	61	-	-	16	21	47	-	-	-	-	16		
	20	18	27	45	52	73	-	-	14	29	56	-	-	-	-	30		
	10	38	49	65	70	84	23	33	51	57	77	-	-	20	26	52		
60	30	18	26	38	45	68	-	-	12	23	29	-	-	-	-	24		
	20	26	35	54	60	78	-	-	13	20	38	-	-	-	-	39		
	10	47	57	72	76	87	31	42	59	64	81	-	-	13	28	60		
56	30	26	33	48	54	74	13	19	32	38	63	-	-	-	-	32		
	20	34	45	62	67	83	20	29	47	53	74	-	-	17	22	48		
	10	56	65	77	81	+	41	51	67	71	85	13	20	37	44	67		
52	30	36	43	57	63	80	21	28	41	48	70	-	-	13	17	42		
	20	44	54	69	74	86	28	39	56	62	80	-	-	11	25	57		
	10	64	72	82	85	+	50	60	73	77	88	20	29	47	53	74		
48	30	46	54	66	71	85	31	38	52	58	77	-	-	11	21	27	53	
	20	54	63	76	80	+	39	49	65	70	84	12	19	36	42	66		
	10	72	78	86	88	+	60	68	80	83	+	30	40	57	63	80		
44	30	57	64	74	78	88	42	50	62	67	83	14	19	32	38	63		
	20	64	72	82	85	+	51	60	74	77	88	20	29	47	53	74		
	10	79	84	+	+	+	69	76	85	87	+	42	51	67	71	85		
40	30	68	73	81	84	+	55	61	72	76	87	24	31	44	51	72		
	20	73	79	87	89	+	62	70	81	84	+	32	42	59	64	81		
	10	85	88	+	+	+	77	82	89	+	+	54	63	75	79	89		
36	30	77	81	87	89	+	66	72	80	83	+	38	45	58	63	80		
	20	81	85	+	+	+	72	78	86	88	+	46	56	70	74	87		
	10	89	+	+	+	+	84	88	+	+	+	66	73	82	85	+		
32	30	84	87	+	+	+	77	81	86	88	+	53	60	70	74	87		
	20	87	+	+	+	+	81	85	+	+	+	61	69	79	83	+		
	10	+	+	+	+	+	89	+	+	+	+	76	82	88	+	+		
28	30	+	+	+	+	+	85	88	+	+	+	68	73	81	84	+		
	20	+	+	+	+	+	88	+	+	+	+	74	79	87	89	+		
	10	+	+	+	+	+	+	+	+	+	+	85	88	+	+	+		

+ = GREATER THAN 90% - = LESS THAN 10%

Didapatkan Jarak Tangan: 7.44 inchi (yang terletak diantara 7 inchi dan 10 inchi), Berat Benda: 41.63 pound (terletak diantara 40 pound dan 44 pound), Frekuensi Pengangkatannya: 4 jam sekali (terletak diantara 5 menit dan 8 jam), dan Jarak Pengangkatannya: 13.15 inchi (Terletak diantara 10 inchi dan 20 inchi). Berikut ini merupakan hasil interpolasinya:

Untuk Berat 44 lb, Jarak Tangan 7 Inchi, Jarak Pengangkatan 20 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 85}{90 - x}$$

$$7.917(90 - x) = 4(5)$$

$$712.53 - 7.917x = 20$$

$$-7.917x = 20 - 712.53$$

$$x = \frac{692.53}{7.917} = 87.4738\%$$

Untuk Berat 44 lb, Jarak Tangan 7 Inchi, Jarak Pengangkatan 10 inchi: 90%

Untuk Berat 44 lb, Jarak Tangan 10 Inchi, Jarak Pengangkatan 20 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{88 - 77}{88 - x}$$

$$7.917(88 - x) = 4(11)$$

$$696.696 - 7.917x = 44$$

$$-7.917x = 44 - 696.696$$

$$x = \frac{652.696}{7.917} = 82.4423\%$$

Untuk Berat 44 lb, Jarak Tangan 10 Inchi, Jarak Pengangkatan 10 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 87}{90 - x}$$

$$7.917(90 - x) = 4(3)$$

$$712.53 - 7.917x = 12$$

$$-7.917x = 12 - 712.53$$

$$x = \frac{700.53}{7.917} = 88.4843\%$$

Untuk Berat 40 lb, Jarak Tangan 7 Inchi, Jarak Pengangkatan 20 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 89}{90 - x}$$

$$7.917(90 - x) = 4(1)$$

$$712.53 - 7.917x = 4$$

$$-7.917x = 4 - 712.53$$

$$x = \frac{708.53}{7.917} = 89.4948\%$$

Untuk Berat 40 lb, Jarak Tangan 7 Inchi, Jarak Pengangkatan 10 inchi: 90%

Untuk Berat 40 lb, Jarak Tangan 10 Inchi, Jarak Pengangkatan 20 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 84}{90 - x}$$

$$7.917(90 - x) = 4(6)$$

$$712.53 - 7.917x = 24$$

$$-7.917x = 24 - 712.53$$

$$x = \frac{688.53}{7.917} = 86.9685\%$$

Untuk Berat 40 lb, Jarak Tangan 10 Inchi, Jarak Pengangkatan 10 inchi: 90%

Untuk Berat 44 lb, Jarak Tangan 7 Inchi:

$$\frac{20 - 10}{20 - 13.15} = \frac{87.4738 - 90}{87.4738 - x}$$

$$10(87.4738 - x) = 6.85(-2.5262)$$

$$874.738 - 10x = -17.3045$$

$$-10x = -17.3045 - 874.738$$

$$x = \frac{892.0425}{10} = 89.2043\%$$

Untuk Berat 44 lb, Jarak Tangan 10 Inchi:

$$\frac{20 - 10}{20 - 13.15} = \frac{82.4423 - 88.4843}{82.4423 - x}$$

$$10(82.4423 - x) = 6.85(-6.042)$$

$$824.423 - 10x = -41.3877$$

$$-10x = -41.3877 - 824.423$$

$$x = \frac{865.8107}{10} = 86.5811\%$$

Untuk Berat 40 lb, Jarak Tangan 7 Inchi:

$$\frac{20 - 10}{20 - 13.15} = \frac{89.4948 - 90}{89.4948 - x}$$

$$10(89.4948 - x) = 6.85(-0.5052)$$

$$894.948 - 10x = -3.4606$$

$$-10x = -3.4606 - 894.948$$

$$x = \frac{898.4086}{10} = 89.8409\%$$

Untuk Berat 40 lb, Jarak Tangan 10 Inchi:

$$\frac{20 - 10}{20 - 13.15} = \frac{86.9685 - 90}{86.9685 - x}$$

$$10(86.9685 - x) = 6.85(-3.0315)$$

$$869.685 - 10x = -20.7658$$

$$-10x = -20.7658 - 869.685$$

$$x = \frac{890.4508}{10} = 89.0451\%$$

Untuk Berat 44 lb:

$$\frac{10 - 7}{10 - 7.44} = \frac{86.5811 - 89.2043}{86.5811 - x}$$

$$3(86.5811 - x) = 2.56(-2.6232)$$

$$259.7433 - 3x = -6.7154$$

$$-3x = -6.7154 - 259.7433$$

$$x = \frac{266.4587}{3} = 88.8196\%$$

Untuk Berat 40 lb:

$$\frac{10 - 7}{10 - 7.44} = \frac{89.0451 - 89.8409}{89.0451 - x}$$

$$3(89.0451 - x) = 2.56(-0.7958)$$

$$267.1353 - 3x = -2.0372$$

$$-3x = -2.0372 - 267.1353$$

$$x = \frac{269.1725}{3} = 89.7242\%$$

Interpolasi Akhir:

$$\frac{44 - 40}{44 - 41.63} = \frac{88.8196 - 89.7242}{88.8196 - x}$$

$$4(88.8196 - x) = 2.37(-0.9046)$$

$$355.2784 - 4x = -2.1439$$

$$-4x = -2.1439 - 355.2784$$

$$x = \frac{357.4223}{4} = 89.3556\%$$

18. Untuk Gerakan Membawa (*Carrying*) Kardus Berisi Produk Akhir Mainan Puzzle dari Stasiun Cat Kuas menuju Stasiun Packaging:

JK

TABLE 10M - MALE POPULATION PERCENTAGES FOR PULLING TASKS
SUSTAINED FORCE

SUSTAINED PULLING FORCE (POUNDS)	HAND HEIGHT (INCHES)	PULLING DISTANCE	7 FEET					25 FEET					50 FEET												
			FREQUENCY ONE PULL EVERY																						
			30s	1m	5m	30m	8h	30s	1m	5m	30m	8h	30s	1m	5m	30m	8h								
105	57	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-									
			37	-	-	-	-	18	-	-	-	-	-	-	-	-	-								
				25	-	-	-	-	25	-	-	-	-	-	-	-	-	-							
100	57	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-									
			37	-	-	-	-	24	-	-	-	-	-	-	-	-	-								
				25	-	-	-	-	31	-	-	-	-	-	-	-	-	-							
95	57	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-									
			37	-	-	-	-	31	-	-	-	-	-	-	-	-	-								
				25	-	-	-	13	38	-	-	-	13	-	-	-	-	-							
90	57	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-									
			37	-	-	-	13	38	-	-	-	13	-	-	-	-	-								
				25	-	-	-	19	46	-	-	-	19	-	-	-	-	-							
85	57	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-									
			37	-	-	-	-	11	-	-	-	-	-	-	-	-	-								
				25	-	-	-	19	46	-	-	-	19	-	-	-	-	-							
80	57	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-									
			37	-	-	-	27	54	-	-	-	27	-	-	-	-	11								
				25	-	-	15	34	61	-	-	-	11	35	-	-	-	17							
75	57	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-									
			37	-	-	16	35	62	-	-	-	12	36	-	-	-	18								
				25	-	-	22	43	69	-	-	-	17	44	-	-	-	24							
70	57	-	-	-	-	11	34	-	-	-	11	-	-	-	-	-									
			37	-	11	24	45	70	-	-	-	19	46	-	-	-	26								
				25	-	16	31	53	75	-	-	-	25	53	-	-	-	34							
65	57	-	-	-	-	18	45	-	-	-	18	-	-	-	-	-									
			37	-	18	34	55	77	-	-	-	28	56	-	-	-	12	36							
				25	16	25	41	62	81	-	-	-	16	36	63	-	-	18	44						
60	57	-	-	-	-	11	28	56	-	-	-	28	-	-	-	-	12								
			37	18	28	45	65	83	-	-	-	18	39	65	-	-	-	20	48						
				25	25	36	53	71	85	-	-	-	25	47	71	-	-	-	14	27	55				
55	57	-	-	-	-	19	40	66	-	-	-	15	41	-	-	-	-	22							
			37	29	40	57	74	87	-	-	-	29	51	74	-	-	-	13	17	32	59				
				25	37	48	63	78	+	-	-	-	12	37	58	79	-	-	-	19	23	40	66		
50	57	-	-	-	-	17	32	53	76	-	-	-	26	54	-	-	-	-	11	34					
			37	43	53	68	81	+	-	-	-	16	42	63	81	-	-	-	-	23	29	45	70		
				25	50	61	73	85	+	-	-	-	23	50	69	85	-	-	-	-	31	36	53	75	
45	57	-	20	30	46	66	83	-	-	-	20	41	67	-	-	-	-	-	-	22	49				
			37	57	66	78	87	+	-	-	-	29	56	74	87	-	-	-	-	-	12	38	43	59	79
				25	64	72	82	+	-	-	-	14	37	64	79	+	-	-	-	-	-	18	46	51	66
40	57	-	35	46	62	77	85	-	-	-	11	35	57	78	-	-	-	-	-	17	22	37	64		
			37	70	77	85	+	+	-	-	-	21	46	70	83	+	-	-	-	-	26	54	59	72	86
				25	76	81	88	+	+	-	-	-	29	53	76	86	+	-	-	-	-	33	61	66	77
35	57	-	54	63	75	86	+	-	-	-	26	54	72	86	-	-	-	-	-	34	40	56	77		
			37	81	86	+	+	+	-	-	-	39	63	81	89	+	-	-	-	-	44	70	74	83	+
				25	85	89	+	+	+	-	-	-	47	69	85	+	+	-	-	-	-	52	75	78	86
30	57	-	71	78	86	+	+	-	-	-	23	47	71	84	+	-	-	-	-	27	56	61	73	87	
			37	89	+	+	+	+	-	-	-	60	78	89	+	+	-	-	-	-	64	82	85	+	+
				25	+	+	+	+	+	-	-	-	67	82	+	+	+	-	-	-	-	70	86	88	+
25	57	-	85	89	+	+	+	-	-	-	48	70	85	+	+	-	-	-	-	53	75	79	86	+	
			37	+	+	+	+	+	-	-	-	78	89	+	+	+	-	-	-	-	81	+	+	+	+
				25	+	+	+	+	+	-	-	-	82	+	+	+	+	-	-	-	-	84	+	+	+
20	57	-	+	+	+	+	+	-	-	-	74	86	+	+	+	-	-	-	-	77	89	+	+	+	
			37	+	+	+	+	+	-	-	-	+	+	+	+	+	-	-	-	-	+	+	+	+	+
				25	+	+	+	+	+	-	-	-	+	+	+	+	+	-	-	-	-	+	+	+	+

+ = GREATER THAN 90% - = LESS THAN 10%

Didapatkan Ketinggian Tangannya saat memulai adalah 36.54 inchi, Jarak Membawanya adalah 5.18 Feet, dan Berat beban yang dibawa adalah 41.63 pound. Jika dilihat dari tabel, jarak minimum yang dihitung pada tabel adalah 7 Feet, karena jarak yang ada antara Stasiun Cat Kuas dan Stasiun Packaging adalah 5.18 Feet maka hasilnya dianggap 90% karena pada

perhitungan dengan berat 40 pound dan 45 pound saja untuk jarak membawa 7 feet, ketinggian tangan 25 inch dan 37 inch pada frekuensi 5 menit dan 8 jam saja sudah muncul banyak sekali 90% (ditandai dengan tanda +) maka populasinya untuk 5.18 feet dianggap 90%.

19. Untuk Gerakan Mengangkat (*Lifting*) Kardus Berisi Kayu hasil Gerinda dari Lantai:

TABLE 2M - MALE POPULATION PERCENTAGES FOR LIFTING TASKS
ENDING BETWEEN KNUCKLE AND SHOULDER HEIGHT ($\geq 31"$ AND $\leq 57"$)

HAND DISTANCE	7 INCHES					10 INCHES					15 INCHES						
	FREQUENCY ONE LIFT EVERY																
	15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h		
OBJECT WEIGHT (POUNDS)	LIFTING DISTANCE (INCHES)	96	30	-	-	-	-	12	-	-	-	-	-	-	-	-	
			20	-	-	-	-	25	-	-	-	-	12	-	-	-	-
			10	-	-	16	21	46	-	-	-	-	30	-	-	-	-
		92	30	-	-	-	-	16	-	-	-	-	-	-	-	-	-
			20	-	-	-	-	30	-	-	-	-	16	-	-	-	-
			10	-	-	20	26	52	-	-	-	-	13	36	-	-	-
		88	30	-	-	-	-	21	-	-	-	-	-	-	-	-	-
			20	-	-	-	-	36	-	-	-	-	21	-	-	-	-
			10	-	11	25	32	57	-	-	12	17	42	-	-	-	13
		84	30	-	-	-	-	27	-	-	-	-	13	-	-	-	-
			20	-	-	12	17	42	-	-	-	-	26	-	-	-	-
			10	-	15	31	38	63	-	-	17	22	48	-	-	-	17
		80	30	-	-	-	-	11	33	-	-	-	-	-	-	-	18
			20	-	-	17	23	49	-	-	-	-	11	32	-	-	-
			10	12	20	38	44	68	-	-	22	28	54	-	-	-	23
		76	30	-	-	-	-	11	16	40	-	-	-	-	-	-	24
			20	-	-	23	29	55	-	-	11	15	39	-	-	-	11
			10	17	26	45	51	72	-	13	29	35	60	-	-	-	29
		72	30	-	-	16	21	47	-	-	-	-	31	-	-	-	-
			20	-	14	30	36	61	-	-	16	21	47	-	-	-	16
			10	23	33	52	58	77	11	19	36	42	66	-	-	-	13
68	30	-	11	22	28	54	-	-	-	-	15	39	-	-	11		
	20	12	20	37	44	67	-	-	22	28	54	-	-	-	23		
	10	30	41	59	64	81	16	25	43	50	72	-	-	14	19		
64	30	12	17	30	36	61	-	-	16	21	47	-	-	-	16		
	20	18	27	45	52	73	-	-	14	29	36	61	-	-	30		
	10	38	49	65	70	84	23	33	51	57	77	-	-	20	26		
60	30	18	25	38	45	68	-	-	12	23	29	55	-	-	24		
	20	25	35	54	60	78	13	20	38	44	68	-	-	15	39		
	10	47	57	72	76	87	31	42	59	64	81	-	-	13	28		
56	30	26	33	48	54	74	13	19	32	38	63	-	-	-	32		
	20	34	45	62	67	83	20	29	47	53	74	-	-	17	22		
	10	56	65	77	81	88	41	51	67	71	85	13	20	37	44		
52	30	36	43	57	63	80	21	28	41	48	70	-	-	13	17		
	20	44	54	69	74	86	28	39	56	62	80	-	-	11	25		
	10	64	72	82	85	88	50	60	73	77	88	20	29	47	53		
48	30	46	54	66	71	85	31	38	52	58	77	-	-	11	21		
	20	54	63	76	80	88	39	49	65	70	84	12	19	36	42		
	10	72	78	86	88	88	60	68	80	83	88	30	40	57	63		
44	30	57	64	74	78	88	42	50	62	67	83	14	19	32	38		
	20	64	72	82	85	88	51	60	74	77	88	20	29	47	53		
	10	79	84	88	88	88	69	76	85	87	88	42	51	67	71		
40	30	68	73	81	84	88	55	61	72	76	87	24	31	44	51		
	20	73	79	87	89	88	62	70	81	84	88	32	42	59	64		
	10	85	88	88	88	88	77	82	89	89	88	54	63	75	79		
36	30	77	81	87	89	88	66	72	80	83	88	38	45	58	63		
	20	81	85	88	88	88	72	78	86	88	88	46	56	70	74		
	10	89	88	88	88	88	84	88	88	88	88	66	73	82	85		
32	30	84	87	88	88	88	77	81	86	88	88	53	60	70	74		
	20	87	88	88	88	88	81	85	88	88	88	61	69	79	83		
	10	88	88	88	88	88	89	88	88	88	88	76	82	88	88		
28	30	88	88	88	88	88	85	88	88	88	88	68	73	81	84		
	20	88	88	88	88	88	88	88	88	88	88	74	79	87	89		
	10	88	88	88	88	88	88	88	88	88	88	85	88	88	88		

+ = GREATER THAN 90% - = LESS THAN 10%

Didapatkan Jarak Tangan: 7.36 inchi (yang terletak diantara 7 inchi dan 10 inchi), Berat Benda: 40.75 pound (terletak diantara 40 pound dan 44 pound), Frekuensi Pengangkatannya: 4 jam sekali (terletak diantara 5 menit dan 8 jam), dan Jarak Pengangkatannya: 23.19 inchi (Terletak diantara 20 inchi dan 30 inchi). Berikut ini merupakan hasil interpolasinya:

Untuk Berat 44 lb, Jarak Tangan 7 Inchi, Jarak Pengangkatan 30 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{88 - 78}{88 - x}$$

$$7.917(88 - x) = 4(10)$$

$$696.696 - 7.917x = 40$$

$$-7.917x = 40 - 696.696$$

$$x = \frac{656.659}{7.917} = 82.9476\%$$

Untuk Berat 44 lb, Jarak Tangan 7 Inchi, Jarak Pengangkatan 20 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 85}{90 - x}$$

$$7.917(90 - x) = 4(5)$$

$$712.53 - 7.917x = 20$$

$$-7.917x = 20 - 712.53$$

$$x = \frac{692.53}{7.917} = 87.4738\%$$

Untuk Berat 44 lb, Jarak Tangan 10 Inchi, Jarak Pengangkatan 30 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{83 - 67}{83 - x}$$

$$7.917(83 - x) = 4(16)$$

$$657.111 - 7.917x = 64$$

$$-7.917x = 64 - 657.111$$

$$x = \frac{593.111}{7.917} = 74.9161\%$$

Untuk Berat 44 lb, Jarak Tangan 10 Inchi, Jarak Pengangkatan 20 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{88 - 77}{88 - x}$$

$$7.917(88 - x) = 4(11)$$

$$696.696 - 7.917x = 44$$

$$-7.917x = 44 - 696.696$$

$$x = \frac{652.696}{7.917} = 82.4423\%$$

Untuk Berat 40 lb, Jarak Tangan 7 Inchi, Jarak Pengangkatan 30 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 84}{90 - x}$$

$$7.917(90 - x) = 4(6)$$

$$712.53 - 7.917x = 24$$

$$-7.917x = 24 - 712.53$$

$$x = \frac{688.53}{7.917} = 86.9685\%$$

Untuk Berat 40 lb, Jarak Tangan 7 Inchi, Jarak Pengangkatan 20 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 89}{90 - x}$$

$$7.917(90 - x) = 4(1)$$

$$712.53 - 7.917x = 4$$

$$-7.917x = 4 - 712.53$$

$$x = \frac{708.53}{7.917} = 89.4948\%$$

Untuk Berat 40 lb, Jarak Tangan 10 Inchi, Jarak Pengangkatan 10 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{87 - 76}{87 - x}$$

$$7.917(87 - x) = 4(11)$$

$$688.779 - 7.917x = 44$$

$$-7.917x = 44 - 688.779$$

$$x = \frac{644.779}{7.917} = 82.4423\%$$

Untuk Berat 40 lb, Jarak Tangan 10 Inchi, Jarak Pengangkatan 20 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 84}{90 - x}$$

$$7.917(90 - x) = 4(6)$$

$$712.53 - 7.917x = 24$$

$$-7.917x = 24 - 712.53$$

$$x = \frac{688.53}{7.917} = 86.9685\%$$

Untuk Berat 44 lb, Jarak Tangan 7 Inchi:

$$\frac{30 - 20}{30 - 23.19} = \frac{82.9476 - 87.4738}{82.9476 - x}$$

$$10(82.9476 - x) = 6.81(-4.5262)$$

$$829.476 - 10x = -30.8234$$

$$-10x = -30.8234 - 829.476$$

$$x = \frac{860.2994}{10} = 86.0299\%$$

Untuk Berat 44 lb, Jarak Tangan 10 Inchi:

$$\frac{30 - 20}{30 - 23.19} = \frac{74.9161 - 82.4423}{74.9161 - x}$$

$$10(74.9161 - x) = 6.81(-7.5262)$$

$$749.161 - 10x = -51.2534$$

$$-10x = -51.2534 - 749.161$$

$$x = \frac{800.4144}{10} = 80.0414\%$$

Untuk Berat 40 lb, Jarak Tangan 7 Inchi:

$$\frac{30 - 20}{30 - 23.19} = \frac{86.9685 - 89.4948}{86.9685 - x}$$

$$10(86.9685 - x) = 6.81(-2.5263)$$

$$869.685 - 10x = -17.2041$$

$$-10x = -17.2041 - 869.685$$

$$x = \frac{886.8891}{10} = 88.6889\%$$

Untuk Berat 40 lb, Jarak Tangan 10 Inchi:

$$\frac{30 - 20}{30 - 23.19} = \frac{81.4423 - 86.9685}{81.4423 - x}$$

$$10(81.4423 - x) = 6.81(-5.5262)$$

$$814.423 - 10x = -37.6334$$

$$-10x = -37.6334 - 814.423$$

$$x = \frac{852.0564}{10} = 85.2056\%$$

Untuk Berat 44 lb:

$$\frac{10 - 7}{10 - 7.36} = \frac{80.0414 - 86.0299}{80.0414 - x}$$

$$3(80.0414 - x) = 2.64(-5.9885)$$

$$240.1242 - 3x = -15.8096$$

$$-3x = -15.8096 - 240.1242$$

$$x = \frac{255.9338}{3} = 85.3113\%$$

Untuk Berat 40 lb:

$$\frac{10 - 7}{10 - 7.36} = \frac{85.2056 - 88.6889}{85.2056 - x}$$

$$3(85.2056 - x) = 2.64(-3.4833)$$

$$255.6168 - 3x = -9.1959$$

$$-3x = -9.1959 - 255.6168$$

$$x = \frac{264.8127}{3} = 88.2709\%$$

Interpolasi Akhir:

$$\frac{44 - 40}{44 - 40.75} = \frac{85.3113 - 88.2709}{85.3113 - x}$$

$$4(85.3113 - x) = 3.25(-2.9596)$$

$$341.2452 - 4x = -9.6187$$

$$-4x = -9.6187 - 341.2452$$

$$x = \frac{350.8639}{4} = 87.716\%$$

20. Untuk Gerakan Membawa (*Carrying*) Kardus Berisi Kayu yang sudah di Gerinda dari Stasiun Gerinda menuju Stasiun Press:

TABLE 11M - MALE POPULATION PERCENTAGES FOR CARRYING TASKS

CARRYING DISTANCE		7 FEET					14 FEET					28 FEET					
		15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h	
OBJECT WEIGHT (POUNDS)	99	43	-	-	-	18	50	-	-	-	-	36	-	-	-	-	22
		33	-	11	22	36	67	-	-	11	21	54	-	-	-	15	47
	94	43	-	-	12	23	56	-	-	-	12	42	-	-	-	-	28
		33	-	15	28	42	71	-	-	15	27	60	-	-	11	20	53
	89	43	-	-	17	29	62	-	-	-	17	49	-	-	-	-	34
		33	14	20	35	49	75	-	-	21	34	65	-	15	16	26	59
	85	43	-	-	22	35	66	-	-	11	21	54	-	-	-	-	40
		33	18	25	40	54	78	-	-	26	39	70	-	19	20	32	64
	81	43	-	14	27	41	70	-	-	15	27	60	-	-	-	14	46
		33	23	31	46	59	81	-	13	31	45	73	11	24	25	38	68
	77	43	13	19	33	47	74	-	-	20	33	65	-	-	-	19	52
		33	29	37	52	64	84	-	17	38	51	77	15	30	31	44	73
	73	43	18	25	40	53	78	-	-	26	39	69	-	13	14	25	58
		33	35	44	58	69	86	11	23	44	57	80	21	37	38	50	76
	69	43	24	32	46	59	81	-	13	32	46	74	-	18	19	31	63
		33	42	50	64	74	88	16	29	51	63	83	27	44	45	57	80
	65	43	31	39	53	65	84	-	19	40	53	78	-	25	26	38	69
		33	49	57	69	78	+	22	37	58	69	86	34	51	52	63	83
	61	43	39	47	60	71	87	13	26	47	60	82	16	32	34	46	74
		33	57	64	74	82	+	29	44	64	74	88	42	58	59	69	86
57	43	47	55	67	76	89	19	34	55	67	85	23	41	42	54	79	
	33	64	70	79	85	+	37	52	70	78	+	50	65	66	74	88	
53	43	56	62	73	80	+	27	43	63	73	88	31	50	51	62	83	
	33	70	75	83	88	+	46	60	76	83	+	58	71	72	79	+	
49	43	64	70	78	84	+	37	52	70	78	+	41	58	59	69	86	
	33	76	80	86	+	+	55	68	81	86	+	66	77	78	83	+	
45	43	71	76	83	88	+	47	61	76	83	+	51	67	68	76	89	
	33	81	85	89	+	+	64	75	85	89	+	73	82	82	87	+	
41	43	78	82	87	+	+	58	70	82	87	+	61	74	75	82	+	
	33	86	88	+	+	+	72	81	88	+	+	80	86	87	+	+	
36	43	85	87	+	+	+	70	79	88	+	+	73	82	83	87	+	
	33	+	+	+	+	+	81	87	+	+	+	86	+	+	+	+	
31	43	+	+	+	+	+	81	87	+	+	+	82	89	89	+	+	
	33	+	+	+	+	+	88	+	+	+	+	+	+	+	+	+	

+ = GREATER THAN 90% - = LESS THAN 10%

Didapatkan Ketinggian Tangannya saat memulai adalah 36.73 inchi (terletak diantara 33 inchi dan 43 inchi), Jarak Membawanya adalah 9.02 Feet (terletak diantara 14 Feet dan 28 Feet), dan Berat beban yang dibawa adalah 40.75 pound (terletak diantara 36 lb dan 41 lb). Dengan frekuensi membawanya 4 jam sekali (terletak diantara 5 menit dan 8 jam). Berikut ini merupakan hasil interpolasinya:

Untuk berat 41 lb, Jarak Membawa: 7 Feet: 90%.

Untuk berat 41 lb, Jarak Membawa: 14 Feet, Ketinggian Tangan: 43 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 87}{90 - x}$$

$$7.917(90 - x) = 4(3)$$

$$712.53 - 7.917x = 12$$

$$-7.917x = 12 - 712.53$$

$$x = \frac{700.53}{7.917} = 88.4843\%$$

Untuk berat 41 lb, Jarak Membawa: 14 Feet, Ketinggian Tangan: 33 inchi: 90%.

Untuk berat 41 lb, Jarak Membawa: 14 Feet:

$$\frac{43 - 33}{43 - 36.73} = \frac{88.4843 - 90}{88.4843 - x}$$

$$10(88.4843 - x) = 6.27(-1.5157)$$

$$884.843 - 10x = -9.5034$$

$$-10x = -9.5034 - 884.843$$

$$x = \frac{894.3464}{10} = 89.4346\%$$

Untuk Berat 41 lb:

$$\frac{14 - 7}{14 - 9.02} = \frac{89.4346 - 90}{89.4346 - x}$$

$$7(89.4346 - x) = 4.98(-0.5654)$$

$$626.0422 - 7x = -2.8157$$

$$-7x = -2.8157 - 626.0422$$

$$x = \frac{628.8579}{7} = 89.8368\%$$

Untuk Berat 36 lb: 90%

Interpolasi Akhir:

$$\frac{41 - 36}{41 - 40.75} = \frac{89.8636 - 90}{89.8636 - x}$$

$$5(89.8636 - x) = 0.25(-0.1632)$$

$$449.184 - 5x = -0.0408$$

$$-5x = -0.0408 - 449.184$$

$$x = \frac{449.2248}{5} = 89.845\%$$

21. Untuk Gerakan Menurunkan (*Lowering*) Kayu dari Gerobak Pengangkut menuju Lantai Stasiun Gergaji Besar:

TABLE 4M - MALE POPULATION PERCENTAGES FOR LOWERING TASKS BEGINNING BELOW KNUCKLE HEIGHT (<31")

HAND DISTANCE		7 INCHES					10 INCHES					15 INCHES							
FREQUENCY ONE LOWER EVERY		15s	30s	1m	5m	8h	15s	30s	1m	5m	8h	15s	30s	1m	5m	8h			
OBJECT WEIGHT (POUNDS)	LOWERING DISTANCE (INCHES)	87	30	-	-	23	47	73	-	-	11	31	62	-	-	-	33		
			20	-	14	28	51	76	-	-	14	36	66	-	-	-	38		
			10	21	28	42	64	83	-	14	26	50	75	-	-	-	20	52	
		84	30	-	13	27	51	75	-	-	14	35	65	-	-	-	-	37	
			20	-	17	32	55	78	-	-	17	40	69	-	-	-	12	42	
			10	24	32	46	67	84	11	17	30	54	77	-	-	-	24	55	
		81	30	-	16	31	55	78	-	-	17	40	69	-	-	-	12	41	
			20	13	20	36	59	80	-	-	21	44	72	-	-	-	15	46	
			10	29	36	50	70	86	14	20	35	58	80	-	-	-	28	59	
		78	30	13	20	35	58	80	-	-	21	44	71	-	-	-	15	46	
			20	16	24	40	62	82	-	-	11	25	49	74	-	-	-	19	50
			10	33	40	54	72	87	17	24	39	61	81	-	-	11	32	63	
		75	30	16	24	40	62	82	-	-	11	25	49	74	-	-	-	19	50
			20	20	28	45	66	84	-	-	14	29	53	77	-	-	-	23	54
			10	37	45	58	75	88	21	29	44	65	83	-	-	15	36	66	
		72	30	20	28	45	66	84	-	-	14	29	53	77	-	-	-	23	54
			20	24	33	49	69	85	11	18	34	57	79	-	-	-	27	59	
			10	42	50	62	78	89	25	33	48	68	85	-	-	18	41	70	
		69	30	24	33	50	69	85	11	18	34	57	79	-	-	-	27	59	
			20	29	38	54	72	87	14	22	39	61	81	-	-	11	32	63	
10	47		54	66	80	+	30	38	53	72	87	-	-	23	45	73			
66	30	29	38	54	73	87	15	23	39	62	82	-	-	12	32	63			
	20	34	43	59	76	88	18	27	44	66	84	-	-	15	37	67			
	10	52	59	69	82	+	35	44	58	75	88	-	-	13	27	51	76		
63	30	35	44	59	76	89	19	28	45	66	84	-	-	15	38	67			
	20	40	49	63	78	+	23	32	49	69	86	-	-	19	43	70			
	10	57	63	73	84	+	41	49	62	78	89	-	-	17	33	56	79		
60	30	40	49	64	79	+	24	33	50	70	86	-	-	20	43	71			
	20	45	54	67	81	+	28	38	55	73	87	-	-	24	48	74			
	10	62	67	76	86	+	45	54	66	80	+	14	21	38	61	81			
57	30	46	55	68	82	+	29	39	56	74	88	-	-	25	49	75			
	20	51	59	71	83	+	34	44	60	76	89	-	-	13	30	54	77		
	10	66	72	79	88	+	52	59	71	83	+	18	27	44	66	84			
54	30	52	60	72	84	+	36	45	61	77	89	-	-	14	32	55	78		
	20	57	64	75	86	+	40	50	65	80	+	-	-	18	35	59	80		
	10	71	75	82	+	+	58	64	74	85	+	24	33	50	70	86			
51	30	58	66	76	86	+	42	52	66	80	+	11	19	38	61	81			
	20	62	69	79	88	+	47	56	70	82	+	14	23	43	65	83			
	10	75	79	85	+	+	63	69	78	87	+	30	40	56	74	88			
48	30	64	71	80	88	+	49	58	71	83	+	16	26	45	66	84			
	20	68	74	82	89	+	54	62	74	85	+	20	30	50	70	86			
	10	78	82	87	+	+	68	74	81	89	+	37	47	62	78	+			
45	30	70	75	83	+	+	56	64	76	86	+	22	33	52	71	86			
	20	73	78	85	+	+	60	68	78	87	+	26	38	57	74	88			
	10	82	85	89	+	+	73	78	84	+	+	44	54	68	81	+			
42	30	75	79	86	+	+	63	70	80	88	+	30	41	60	76	89			
	20	77	81	87	+	+	67	73	82	89	+	34	46	63	79	+			
	10	85	87	+	+	+	78	82	87	+	+	52	61	73	85	+			
39	30	79	83	88	+	+	69	75	83	+	+	38	49	66	80	+			
	20	81	85	89	+	+	72	78	85	+	+	43	54	70	82	+			
	10	88	+	+	+	+	82	85	89	+	+	60	67	78	87	+			
36	30	83	+	+	+	+	75	80	87	+	+	47	58	73	84	+			
	20	85	+	+	+	+	78	82	88	+	+	52	62	75	86	+			
	10	+	+	+	+	+	85	88	+	+	+	67	74	82	+	+			

+ = GREATER THAN 90% - = LESS THAN 10%

Didapatkan Jarak Tangan: 7.36 inci (yang terletak diantara 7 inci dan 10 inci), Berat Benda: 62.99 pound (terletak diantara 60 pound dan 63 pound), Frekuensi Pengangkatannya: 8 jam sekali, dan Jarak Penurunannya: 12.34 inci (Terletak diantara 10 inci dan 20 inci). Berikut ini merupakan hasil interpolasinya:

Untuk Berat 63 lb, Jarak Tangan 7 Inchi: 90%

Untuk Berat 63 lb, Jarak Tangan 10 Inchi:

$$\frac{20 - 10}{20 - 12.34} = \frac{85 - 89}{85 - x}$$

$$10(85 - x) = 7.66(-4)$$

$$850 - 10x = -30.64$$

$$-10x = -30.64 - 850$$

$$x = \frac{880.64}{10} = 88.064\%$$

Untuk Berat 60 lb, Jarak Tangan 7 Inchi: 90%

Untuk Berat 60 lb, Jarak Tangan 10 Inchi:

$$\frac{20 - 10}{20 - 12.34} = \frac{87 - 90}{87 - x}$$

$$10(87 - x) = 7.66(-3)$$

$$870 - 10x = -22.98$$

$$-10x = -22.98 - 870$$

$$x = \frac{892.98}{10} = 89.298\%$$

Untuk Berat 63 lb:

$$\frac{10 - 7}{10 - 7.36} = \frac{88.064 - 90}{88.064 - x}$$

$$3(88.064 - x) = 2.64(-1.9367)$$

$$264.192 - 3x = -5.111$$

$$-3x = -5.111 - 264.192$$

$$x = \frac{269.303}{3} = 89.7677\%$$

Untuk Berat 60 lb:

$$\frac{10 - 7}{10 - 7.36} = \frac{89.298 - 90}{89.298 - x}$$

$$3(89.298 - x) = 2.64(-0.702)$$

$$267.894 - 3x = -1.8533$$

$$-3x = -1.8533 - 267.894$$

$$x = \frac{269.7479}{3} = 89.9158\%$$

Interpolasi Akhir:

$$\frac{63 - 60}{63 - 62.99} = \frac{89.7677 - 89.9158}{89.7677 - x}$$

$$3(89.7677 - x) = 0.01(-0.1481)$$

$$269.3031 - 3x = -0.0015$$

$$-3x = -0.0015 - 269.3031$$

$$x = \frac{269.3046}{3} = 89.7682\%$$

22. Untuk Gerakan Menurunkan (*Lowering*) Kardus Berisi Potongan Kayu Hasil Gergaji Besar dari Gerobak Pengangkut menuju Lantai Stasiun Amplas:

TABLE 4M - MALE POPULATION PERCENTAGES FOR LOWERING TASKS
BEGINNING BELOW KNUCKLE HEIGHT (<31")

HAND DISTANCE		7 INCHES					10 INCHES					15 INCHES							
		15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h			
OBJECT WEIGHT (POUNDS)	LOWERING DISTANCE (INCHES)	87	30	-	-	23	47	73	-	-	11	31	62	-	-	-	-	33	
			20	-	14	28	51	76	-	-	14	36	66	-	-	-	-	38	
			10	21	28	42	64	83	-	14	26	50	75	-	-	-	20	52	
		84	30	-	13	27	51	75	-	-	14	35	65	-	-	-	-	37	
			20	-	17	32	55	78	-	-	17	40	69	-	-	-	12	42	
			10	24	32	46	67	84	11	17	30	54	77	-	-	-	24	55	
		81	30	-	16	31	55	78	-	-	17	40	69	-	-	-	12	41	
			20	13	20	36	59	80	-	-	21	44	72	-	-	-	15	46	
			10	29	36	50	70	86	14	20	35	58	80	-	-	-	28	59	
		78	30	13	20	35	58	80	-	-	21	44	71	-	-	-	15	46	
			20	16	24	40	62	82	-	11	25	49	74	-	-	-	19	50	
			10	33	40	54	72	87	17	24	39	61	81	-	-	11	32	63	
		75	30	16	24	40	62	82	-	11	25	49	74	-	-	-	19	50	
			20	20	28	45	66	84	-	14	29	53	77	-	-	-	23	54	
			10	37	45	58	75	88	21	29	44	65	83	-	-	15	36	66	
		72	30	20	28	45	66	84	-	14	29	53	77	-	-	-	23	54	
			20	24	33	49	69	85	-	11	18	34	57	79	-	-	-	27	59
			10	42	50	62	78	89	25	33	48	68	85	-	-	18	41	70	
		69	30	24	33	50	69	85	-	11	18	34	57	79	-	-	-	27	59
			20	29	38	54	72	87	-	14	22	39	61	81	-	-	11	32	63
10	47		54	66	80	+	30	38	53	72	87	-	-	23	46	73			
66	30	29	38	54	73	87	-	15	23	39	62	82	-	-	12	32	63		
	20	34	43	59	76	88	-	18	27	44	66	84	-	-	15	37	67		
	10	52	59	69	82	+	35	44	58	75	88	-	-	13	27	51	76		
63	30	35	44	59	76	89	-	19	28	45	66	84	-	-	15	38	67		
	20	40	49	63	78	+	-	23	32	49	69	85	-	-	19	43	70		
	10	57	63	73	84	+	-	41	49	62	78	89	-	-	17	33	56	79	
60	30	40	49	64	79	+	-	24	33	50	70	86	-	-	20	43	71		
	20	45	54	67	81	+	-	28	38	55	73	87	-	-	24	48	74		
	10	62	67	76	86	+	-	46	54	66	80	+	-	14	21	38	61	81	
57	30	46	55	68	82	+	-	29	39	56	74	88	-	-	26	49	75		
	20	51	59	71	83	+	-	34	44	60	76	89	-	-	13	30	54	77	
	10	66	72	79	88	+	-	52	59	71	83	+	-	18	27	44	66	84	
54	30	52	60	72	84	+	-	36	45	61	77	89	-	-	14	32	55	78	
	20	57	64	75	86	+	-	40	50	65	80	+	-	18	36	59	80		
	10	71	75	82	+	+	58	64	74	85	+	-	24	33	50	70	86		
51	30	58	66	76	86	+	-	42	52	66	80	+	-	11	19	38	61	81	
	20	62	69	79	88	+	-	47	56	70	82	+	-	14	23	43	65	83	
	10	75	79	85	+	+	63	69	78	87	+	-	30	40	56	74	88		
48	30	64	71	80	88	+	-	49	58	71	83	+	-	16	26	45	66	84	
	20	68	74	82	89	+	-	54	62	74	85	+	-	20	30	50	70	86	
	10	78	82	87	+	+	68	74	81	89	+	-	37	47	62	78	+		
45	30	70	75	83	+	+	-	56	64	76	86	+	-	22	33	52	71	86	
	20	73	78	85	+	+	-	60	68	78	87	+	-	26	38	57	74	88	
	10	82	85	89	+	+	-	73	78	84	+	+	-	44	54	68	81	+	
42	30	75	79	86	+	+	-	63	70	80	88	+	-	30	41	60	76	89	
	20	77	81	87	+	+	-	67	73	82	89	+	-	34	45	63	79	+	
	10	85	87	+	+	+	-	78	82	87	+	+	-	52	61	73	85	+	
39	30	79	83	88	+	+	-	69	75	83	+	+	-	38	49	66	80	+	
	20	81	85	89	+	+	-	72	78	85	+	+	-	43	54	70	82	+	
	10	88	+	+	+	+	-	82	85	89	+	+	-	60	67	78	87	+	
36	30	83	+	+	+	-	-	75	80	87	+	+	-	47	58	73	84	+	
	20	85	+	+	+	-	-	78	82	88	+	+	-	52	62	75	86	+	
	10	+	+	+	+	-	-	85	88	+	+	+	-	67	74	82	+	+	

+ = GREATER THAN 90% - = LESS THAN 10%

Didapatkan Jarak Tangan: 7.63 inchi (yang terletak diantara 7 inchi dan 10 inchi), Berat Benda: 52.42 pound (terletak diantara 51 pound dan 54 pound), Frekuensi Pengangkatannya: 8 jam sekali, dan Jarak Penurunannya: 11.65 inchi (Terletak diantara 10 inchi dan 20 inchi). Maka didapatkan hasil dengan tanda + semua maka artinya populasi yang tidak mengalami kelelahan dalam mengerjakan pekerjaan ini adalah 90%.

23. Untuk Gerakan Menurunkan (*Lowering*) Kardus Berisi Potongan Kayu Hasil dihaluskan dari Tangan menuju Lantai Stasiun Gergaji Kecil dan Drilling:

TABLE 5M - MALE POPULATION PERCENTAGES FOR LOWERING TASKS
 BEGINNING BETWEEN KNUCKLE AND SHOULDER HEIGHT (≥31" AND ≤57")

HAND DISTANCE		7 INCHES					10 INCHES					15 INCHES					
		15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h	
OBJECT WEIGHT (POUNDS)	FREQUENCY	LOWERING DISTANCE (INCHES)															
	ONE LOWER EVERY	15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h	
75	30	15	17	20	36	62	-	-	-	22	49	-	-	-	-	20	
	20	21	25	33	51	73	-	13	19	36	62	-	-	-	-	34	
	10	41	46	54	68	83	27	31	39	56	76	-	-	12	27	54	
72	30	19	21	24	41	66	-	-	12	26	54	-	-	-	-	25	
	20	26	30	38	55	76	14	17	24	41	66	-	-	-	14	39	
	10	46	50	58	71	85	32	36	44	60	79	-	11	16	31	58	
69	30	24	25	29	47	70	12	13	16	32	59	-	-	-	-	30	
	20	31	35	44	60	79	18	21	29	46	70	-	-	-	18	44	
	10	51	55	63	75	87	37	41	49	64	81	12	14	20	37	63	
66	30	29	31	35	52	74	16	17	21	37	63	-	-	-	-	11	35
	20	36	41	49	64	81	22	26	34	51	73	-	-	-	22	50	
	10	56	60	67	78	89	42	47	54	69	84	15	18	25	42	67	
63	30	34	36	41	57	77	21	22	26	43	68	-	-	-	-	15	41
	20	42	47	55	69	84	28	32	40	57	77	-	-	13	28	55	
	10	61	65	71	81	+	48	52	59	72	86	20	23	31	48	71	
60	30	40	43	47	62	80	26	28	32	49	72	-	-	-	20	47	
	20	48	52	60	73	86	34	38	46	62	80	-	12	18	34	60	
	10	68	69	75	83	+	54	58	64	76	88	25	29	37	54	75	
57	30	47	49	53	67	83	32	34	38	55	76	-	-	12	26	53	
	20	54	58	65	76	88	40	44	52	67	83	14	17	23	40	65	
	10	71	73	78	86	+	59	63	69	79	89	32	35	43	59	78	
54	30	53	55	59	72	85	39	41	45	61	79	13	14	16	32	59	
	20	60	64	70	80	+	47	51	58	71	85	19	22	29	47	70	
	10	75	77	81	88	+	65	68	74	82	+	38	42	50	65	82	
51	30	60	61	65	76	88	46	48	52	66	82	18	20	22	39	65	
	20	66	69	74	83	+	53	57	64	76	88	25	29	36	53	75	
	10	79	81	84	+	+	70	73	78	85	+	45	49	56	70	84	
48	30	66	67	70	80	+	53	55	58	72	86	25	26	29	47	70	
	20	71	74	79	86	+	60	64	70	80	+	32	36	44	60	79	
	10	82	84	87	+	+	75	77	81	88	+	53	56	63	75	87	
45	30	71	73	75	83	+	60	62	65	76	88	32	34	37	54	75	
	20	76	78	82	88	+	67	70	75	83	+	40	44	52	66	82	
	10	85	87	89	+	+	79	81	84	+	+	60	63	69	79	89	
42	30	76	78	80	87	+	67	68	71	81	+	41	43	46	62	80	
	20	80	82	86	+	+	72	75	79	86	+	49	53	59	72	86	
	10	88	89	+	+	+	83	85	87	+	+	67	69	74	83	+	
39	30	81	82	84	89	+	73	74	77	85	+	50	52	55	69	84	
	20	84	86	88	+	+	78	80	83	89	+	57	61	67	78	88	
	10	+	+	+	+	+	85	88	+	+	+	73	75	79	85	+	
36	30	85	86	87	+	+	79	80	82	88	+	59	61	63	75	87	
	20	88	89	+	+	+	82	84	87	+	+	65	68	73	82	+	
	10	+	+	+	+	+	89	+	+	+	+	78	80	84	89	+	
33	30	88	89	+	+	+	84	84	86	+	+	68	69	71	81	+	
	20	+	+	+	+	+	85	88	+	+	+	73	75	79	85	+	
	10	+	+	+	+	+	+	+	+	+	+	83	85	87	+	+	
30	30	+	+	+	+	+	88	88	89	+	+	75	76	78	85	+	
	20	+	+	+	+	+	+	+	+	+	+	80	81	84	+	+	
	10	+	+	+	+	+	+	+	+	+	+	87	89	+	+	+	
27	30	+	+	+	+	+	+	+	+	+	+	82	83	84	89	+	
	20	+	+	+	+	+	+	+	+	+	+	85	86	89	+	+	
	10	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
24	30	+	+	+	+	+	+	+	+	+	+	87	88	89	+	+	
	20	+	+	+	+	+	+	+	+	+	+	89	+	+	+	+	
	10	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	

+ = GREATER THAN 90% - = LESS THAN 10%+

Didapatkan Jarak Tangan: 7.8 inchi (yang terletak diantara 7 inchi dan 10 inchi), Berat Benda: 40.08 pound (terletak diantara 39 pound dan 42 pound), Frekuensi Pengangkatannya: 4 jam sekali (terletak diantara 5 menit dan 8 jam), dan Jarak Penurunannya: 15.83 inchi (Terletak diantara 10 inchi dan 20 inchi). Berikut ini merupakan hasil interpolasinya:

Untuk Berat 42 lb, Jarak Tangan 7 Inchi: 90%

Untuk Berat 42 lb, Jarak Tangan 10 Inchi, Jarak Penurunan 20 Inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 83}{90 - x}$$

$$7.917(90 - x) = 4(7)$$

$$712.53 - 7.917x = 28$$

$$-7.917x = 28 - 712.53$$

$$x = \frac{684.53}{7.917} = 86.4633\%$$

Untuk Berat 42 lb, Jarak Tangan 10 Inchi, Jarak Penurunan 10 Inchi: 90%

Untuk Berat 39 lb, Jarak Tangan 7 Inchi: 90%

Untuk Berat 39 lb, Jarak Tangan 10 Inchi, Jarak Penurunan 20 Inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 89}{90 - x}$$

$$7.917(90 - x) = 4(1)$$

$$712.53 - 7.917x = 4$$

$$-7.917x = 4 - 712.53$$

$$x = \frac{708.53}{7.917} = 89.4948\%$$

Untuk Berat 39 lb, Jarak Tangan 10 Inchi, Jarak Penurunan 10 Inchi: 90%

Untuk Berat 42 lb, Jarak Tangan 10 Inchi:

$$\frac{20 - 10}{20 - 15.83} = \frac{86.4633 - 90}{86.4633 - x}$$

$$10(86.4633 - x) = 4.17(-3.5367)$$

$$864.633 - 10x = -14.7486$$

$$-10x = -14.7486 - 864.633$$

$$x = \frac{879.381}{10} = 87.9381\%$$

Untuk Berat 39 lb, Jarak Tangan 10 Inchi:

$$\frac{20 - 10}{20 - 15.83} = \frac{89.4948 - 90}{89.4948 - x}$$

$$10(89.4948 - x) = 4.17(-0.5052)$$

$$894.948 - 10x = -2.1067$$

$$-10x = -2.1067 - 894.948$$

$$x = \frac{897.0547}{10} = 89.7055\%$$

Untuk Berat 42 lb:

$$\frac{10 - 7}{10 - 7.8} = \frac{87.9381 - 90}{87.9381 - x}$$

$$3(87.9381 - x) = 2.2(-2.0619)$$

$$263.8143 - 3x = -4.5362$$

$$-3x = -4.5362 - 263.8143$$

$$x = \frac{268.3505}{3} = 89.4502\%$$

Untuk Berat 39 lb:

$$\frac{10 - 7}{10 - 7.8} = \frac{89.7055 - 90}{89.7055 - x}$$

$$3(89.7055 - x) = 2.2(-0.2945)$$

$$269.1165 - 3x = -0.6479$$

$$-3x = -0.6479 - 269.1165$$

$$x = \frac{269.7644}{3} = 89.9215\%$$

Interpolasi Akhir:

$$\frac{42 - 39}{42 - 40.08} = \frac{89.4502 - 89.9215}{89.4502 - x}$$

$$3(89.4502 - x) = 1.32(-0.4713)$$

$$268.3506 - 3x = -0.6221$$

$$-3x = -0.6221 - 268.3506$$

$$x = \frac{269.9727}{3} = 89.6576\%$$

24. Untuk Gerakan Menurunkan (*Lowering*) Kardus Berisi Potongan Kayu Hasil Stasiun Gergaji Kecil dan Drilling dari Tangan menuju Lantai Stasiun Gerinda:

TABLE 5M - MALE POPULATION PERCENTAGES FOR LOWERING TASKS
 BEGINNING BETWEEN KNUCKLE AND SHOULDER HEIGHT (≥31" AND ≤57")

OBJECT WEIGHT (POUNDS)	LOWERING DISTANCE (INCHES)	HAND DISTANCE		7 INCHES					10 INCHES					15 INCHES				
		FREQUENCY		15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h
		ONE	LOWER EVERY															
75	30		15	17	20	36	62	-	-	-	22	49	-	-	-	-	20	
	20		21	25	33	51	73	-	13	19	36	62	-	-	-	-	34	
	10		41	46	54	68	83	27	31	39	56	76	-	-	12	27	54	
72	30		19	21	24	41	66	-	-	12	26	54	-	-	-	-	26	
	20		26	30	38	55	76	14	17	24	41	66	-	-	-	14	39	
	10		46	50	59	71	85	32	36	44	60	79	-	11	16	31	58	
69	30		24	25	29	47	70	12	13	16	32	59	-	-	-	-	30	
	20		31	35	44	60	79	18	21	29	46	70	-	-	-	18	44	
	10		51	55	63	75	87	37	41	49	64	81	12	14	20	37	63	
66	30		29	31	35	52	74	16	17	21	37	63	-	-	-	-	11	35
	20		36	41	49	64	81	22	26	34	51	73	-	-	-	22	50	
	10		56	60	67	78	89	42	47	54	69	84	15	18	25	42	67	
63	30		34	36	41	57	77	21	22	26	43	68	-	-	-	15	41	
	20		42	47	55	69	84	28	32	40	57	77	-	-	13	28	55	
	10		61	65	71	81	+	48	52	59	72	86	20	23	31	48	71	
60	30		40	43	47	62	80	26	28	32	49	72	-	-	-	20	47	
	20		48	52	60	73	86	34	38	46	62	80	-	12	18	34	60	
	10		68	69	75	83	+	54	58	64	76	88	25	29	37	54	75	
57	30		47	49	53	67	83	32	34	38	55	76	-	-	12	26	53	
	20		54	58	65	75	88	40	44	52	67	83	14	17	23	40	65	
	10		71	73	78	86	+	59	63	69	79	89	32	35	43	59	78	
54	30		53	55	59	72	85	39	41	45	61	79	13	14	16	32	59	
	20		60	64	70	80	+	47	51	58	71	85	19	22	29	47	70	
	10		75	77	81	88	+	65	68	74	82	+	38	42	50	65	82	
51	30		60	61	65	75	88	46	48	52	66	82	18	20	22	39	65	
	20		66	69	74	83	+	53	57	64	76	88	25	29	36	53	75	
	10		79	81	84	+	+	70	73	78	85	+	45	49	56	70	84	
48	30		66	67	70	80	+	53	55	58	72	85	25	26	29	47	70	
	20		71	74	79	86	+	60	64	70	80	+	32	36	44	60	79	
	10		82	84	87	+	+	75	77	81	88	+	53	56	63	75	87	
45	30		71	73	75	83	+	60	62	65	76	88	32	34	37	54	75	
	20		76	78	82	88	+	67	70	75	83	+	40	44	52	66	82	
	10		85	87	89	+	+	79	81	84	+	+	60	63	69	79	89	
42	30		76	78	80	87	+	67	68	71	81	+	41	43	46	62	80	
	20		80	82	86	+	+	72	75	79	86	+	49	53	59	72	86	
	10		88	89	+	+	+	83	85	87	+	+	67	69	74	83	+	
39	30		81	82	84	89	+	73	74	77	85	+	50	52	55	69	84	
	20		84	86	88	+	+	78	80	83	89	+	57	61	67	78	88	
	10		+	+	+	+	+	85	88	+	+	+	73	75	79	86	+	
36	30		85	86	87	+	+	79	80	82	88	+	59	61	63	75	87	
	20		88	89	+	+	+	82	84	87	+	+	65	68	73	82	+	
	10		+	+	+	+	+	89	+	+	+	+	78	80	84	89	+	
33	30		88	89	+	+	+	84	84	86	+	+	68	69	71	81	+	
	20		+	+	+	+	+	86	88	+	+	+	73	75	79	86	+	
	10		+	+	+	+	+	+	+	+	+	+	83	85	87	+	+	
30	30		+	+	+	+	+	88	88	89	+	+	75	76	78	85	+	
	20		+	+	+	+	+	+	+	+	+	+	80	81	84	+	+	
	10		+	+	+	+	+	+	+	+	+	+	87	89	+	+	+	
27	30		+	+	+	+	+	+	+	+	+	+	82	83	84	89	+	
	20		+	+	+	+	+	+	+	+	+	+	85	86	89	+	+	
	10		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
24	30		+	+	+	+	+	+	+	+	+	+	87	88	89	+	+	
	20		+	+	+	+	+	+	+	+	+	+	89	+	+	+	+	
	10		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	

+ = GREATER THAN 90% - = LESS THAN 10%

Didapatkan Jarak Tangan: 7.56 inci (yang terletak diantara 7 inci dan 10 inci), Berat Benda: 36.21 pound (terletak diantara 36 pound dan 39 pound), Frekuensi Pengangkatannya: 4 jam sekali (terletak diantara 5 menit dan 8 jam), dan Jarak Penurunannya: 12.87 inci (Terletak diantara 10 inci dan 20 inci). Berikut ini merupakan hasil interpolasinya:

Untuk Berat 39 lb, Jarak Tangan 7 Inchi: 90%

Untuk Berat 39 lb, Jarak Tangan 10 Inchi, Jarak Penurunan 20 Inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 89}{90 - x}$$

$$7.917(90 - x) = 4(1)$$

$$712.53 - 7.917x = 4$$

$$-7.917x = 4 - 712.53$$

$$x = \frac{708.53}{7.917} = 89.4948\%$$

Untuk Berat 39 lb, Jarak Tangan 10 Inchi, Jarak Penurunan 10 Inchi: 90%

Untuk Berat 39 lb, Jarak Tangan 10 Inchi:

$$\frac{20 - 10}{20 - 12.87} = \frac{89.4948 - 90}{89.4948 - x}$$

$$10(89.4948 - x) = 7.13(-0.5052)$$

$$894.948 - 10x = -3.6021$$

$$-10x = -3.6021 - 894.948$$

$$x = \frac{898.5501}{10} = 89.855\%$$

Untuk Berat 39 lb:

$$\frac{10 - 7}{10 - 7.56} = \frac{89.855 - 90}{89.855 - x}$$

$$3(89.855 - x) = 2.44(-0.145)$$

$$269.565 - 3x = -0.3538$$

$$-3x = -0.3538 - 269.565$$

$$x = \frac{269.9188}{3} = 89.9729\%$$

Untuk Berat 36 lb: 90%

Interpolasi Akhir:

$$\frac{39 - 36}{39 - 36.21} = \frac{89.9729 - 90}{89.9729 - x}$$

$$3(89.9729 - x) = 2.79(-0.0271)$$

$$269.9187 - 3x = -0.0756$$

$$-3x = -0.0756 - 269.9187$$

$$x = \frac{269.9943}{3} = 89.9985\%$$

25. Untuk Gerakan Menurunkan (*Lowering*) Kardus Berisi Potongan Kayu yang sudah digerinda dari Tangan menuju Lantai Stasiun Pola:

TABLE 5M - MALE POPULATION PERCENTAGES FOR LOWERING TASKS
BEGINNING BETWEEN KNUCKLE AND SHOULDER HEIGHT (≥31" AND ≤57")

HAND DISTANCE		7 INCHES					10 INCHES					15 INCHES						
FREQUENCY ONE LOWER EVERY		15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h		
OBJECT WEIGHT (POUNDS)	LOWERING DISTANCE (INCHES)	75	30	15	17	20	36	82	-	-	-	22	49	-	-	-	20	
		20	21	25	33	51	73	-	13	19	36	62	-	-	-	-	34	
		10	41	46	54	68	83	27	31	39	56	76	-	-	12	27	54	
		72	30	19	21	24	41	66	-	-	12	26	54	-	-	-	25	
		20	26	30	38	55	76	14	17	24	41	66	-	-	-	14	39	
		10	46	50	58	71	85	32	36	44	60	79	-	11	16	31	58	
		69	30	24	25	29	47	70	12	13	16	32	59	-	-	-	30	
		20	31	35	44	60	79	18	21	29	46	70	-	-	-	18	44	
		10	51	55	63	75	87	37	41	49	64	81	12	14	20	37	63	
		66	30	29	31	35	52	74	16	17	21	37	63	-	-	-	11	36
		20	36	41	49	64	81	22	26	34	51	73	-	-	-	22	50	
		10	56	60	67	78	89	42	47	54	69	84	15	18	25	42	67	
		63	30	34	36	41	57	77	21	22	26	43	68	-	-	-	15	41
		20	42	47	55	69	84	28	32	40	57	77	-	-	13	28	55	
		10	61	65	71	81	+	48	52	59	72	86	20	23	31	48	71	
		60	30	40	43	47	62	80	26	28	32	49	72	-	-	-	20	47
20	48	52	60	73	86	34	38	46	62	80	-	12	18	34	60			
10	68	69	75	83	+	54	58	64	76	88	25	29	37	54	75			
57	30	47	49	53	67	83	32	34	38	55	76	-	-	12	26	53		
20	54	58	65	76	88	40	44	52	67	83	14	17	23	40	66			
10	71	73	78	86	+	59	63	69	79	89	32	35	43	59	78			
54	30	53	55	59	72	85	39	41	45	61	79	13	14	16	32	59		
20	60	64	70	80	+	47	51	58	71	85	19	22	29	47	70			
10	75	77	81	88	+	65	68	74	82	+	38	42	50	65	82			
51	30	60	61	65	76	88	46	48	52	66	82	18	20	22	39	66		
20	66	69	74	83	+	53	57	64	76	88	25	29	36	53	75			
10	79	81	84	+	+	70	73	78	85	+	45	49	56	70	84			
48	30	66	67	70	80	+	53	55	58	72	85	25	26	29	47	70		
20	71	74	79	86	+	60	64	70	80	+	32	36	44	60	79			
10	82	84	87	+	+	75	77	81	88	+	53	56	63	75	87			
45	30	71	73	75	83	+	60	62	65	76	88	32	34	37	54	75		
20	76	78	82	88	+	67	70	75	83	+	40	44	52	66	82			
10	85	87	89	+	+	79	81	84	+	+	60	63	69	79	89			
42	30	76	78	80	87	+	67	68	71	81	+	41	43	46	62	80		
20	80	82	86	+	+	72	75	79	86	+	49	53	59	72	86			
10	88	89	+	+	+	83	85	87	+	+	67	69	74	83	+			
39	30	81	82	84	89	+	73	74	77	85	+	50	52	55	69	84		
20	84	86	88	+	+	78	80	83	89	+	57	61	67	78	88			
10	+	+	+	+	+	86	88	+	+	+	73	75	79	86	+			
36	30	85	86	87	+	+	79	80	82	88	+	59	61	63	76	87		
20	88	89	+	+	+	82	84	87	+	+	65	68	73	82	+			
10	+	+	+	+	+	89	+	+	+	+	78	80	84	89	+			
33	30	88	89	+	+	+	84	84	86	+	+	68	69	71	81	+		
20	+	+	+	+	+	86	88	+	+	+	73	75	79	86	+			
10	+	+	+	+	+	+	+	+	+	+	83	85	87	+	+			
30	30	+	+	+	+	+	88	88	89	+	+	75	76	78	85	+		
20	+	+	+	+	+	+	+	+	+	+	80	81	84	+	+			
10	+	+	+	+	+	+	+	+	+	+	87	89	+	+	+			
27	30	+	+	+	+	+	+	+	+	+	82	83	84	89	+			
20	+	+	+	+	+	+	+	+	+	+	85	86	89	+	+			
10	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+			
24	30	+	+	+	+	+	+	+	+	+	87	88	89	+	+			
20	+	+	+	+	+	+	+	+	+	+	89	+	+	+	+			
10	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+			

+ = GREATER THAN 90% - = LESS THAN 10%+

Didapatkan Jarak Tangan: 7.24 inchi (yang terletak diantara 7 inchi dan 10 inchi), Berat Benda: 43.61 pound (terletak diantara 42 pound dan 45 pound), Frekuensi Pengangkatannya: 4 jam sekali (terletak diantara 5 menit dan 8 jam), dan Jarak Penurunannya: 13.66 inchi (Terletak diantara 10 inchi dan 20 inchi). Berikut ini merupakan hasil interpolasinya:

Untuk Berat 45 lb, Jarak Tangan 7 Inchi, Jarak Penurunan 20 Inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 88}{90 - x}$$

$$7.917(90 - x) = 4(2)$$

$$712.53 - 7.917x = 8$$

$$-7.917x = 8 - 712.53$$

$$x = \frac{704.53}{7.917} = 88.9895\%$$

Untuk Berat 45 lb, Jarak Tangan 7 Inchi, Jarak Penurunan 10 Inchi: 90%

Untuk Berat 45 lb, Jarak Tangan 10 Inchi, Jarak Penurunan 20 Inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 83}{90 - x}$$

$$7.917(90 - x) = 4(7)$$

$$712.53 - 7.917x = 28$$

$$-7.917x = 28 - 712.53$$

$$x = \frac{684.53}{7.917} = 86.4633\%$$

Untuk Berat 45 lb, Jarak Tangan 10 Inchi, Jarak Penurunan 10 Inchi: 90%

Untuk Berat 42 lb, Jarak Tangan 7 Inchi, Jarak Penurunan 20 Inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 86}{90 - x}$$

$$7.917(90 - x) = 4(4)$$

$$712.53 - 7.917x = 16$$

$$-7.917x = 16 - 712.53$$

$$x = \frac{696.53}{7.917} = 87.979\%$$

Untuk Berat 42 lb, Jarak Tangan 7 Inchi, Jarak Penurunan 10 Inchi: 90%

Untuk Berat 45 lb, Jarak Tangan 7 Inchi:

$$\frac{20 - 10}{20 - 13.66} = \frac{88.9695 - 90}{88.9695 - x}$$

$$10(88.9695 - x) = 6.34(-1.0305)$$

$$889.695 - 10x = -6.5334$$

$$-10x = -6.5334 - 889.695$$

$$x = \frac{896.2284}{10} = 89.2284\%$$

Untuk Berat 45 lb, Jarak Tangan 10 Inchi:

$$\frac{20 - 10}{20 - 13.66} = \frac{86.4633 - 90}{86.4633 - x}$$

$$10(86.4633 - x) = 6.34(-3.5367)$$

$$864.633 - 10x = -22.4227$$

$$-10x = -22.4227 - 864.633$$

$$x = \frac{887.0527}{10} = 88.7053\%$$

Untuk Berat 42 lb, Jarak Tangan 7 Inchi: 90%

Untuk Berat 42 lb, Jarak Tangan 10 Inchi:

$$\frac{20 - 10}{20 - 13.66} = \frac{87.979 - 90}{87.979 - x}$$

$$10(87.979 - x) = 6.34(-2.021)$$

$$879.79 - 10x = -12.8131$$

$$-10x = -12.8131 - 879.79$$

$$x = \frac{892.6031}{10} = 89.2603\%$$

Untuk Berat 45 lb:

$$\frac{10 - 7}{10 - 7.24} = \frac{88.7053 - 89.6228}{88.7053 - x}$$

$$3(88.7053 - x) = 2.76(-0.9175)$$

$$266.1159 - 3x = -2.5323$$

$$-3x = -2.5323 - 266.1159$$

$$x = \frac{268.6482}{3} = 89.5494\%$$

Untuk Berat 42 lb:

$$\frac{10 - 7}{10 - 7.24} = \frac{89.2603 - 90}{89.2603 - x}$$

$$3(89.2603 - x) = 2.76(-0.7397)$$

$$267.7809 - 3x = -2.0416$$

$$-3x = -2.0416 - 267.7809$$

$$x = \frac{269.8225}{3} = 89.9408\%$$

Interpolasi Akhir:

$$\frac{45 - 42}{45 - 43.61} = \frac{89.5494 - 89.9408}{89.5494 - x}$$

$$3(89.5494 - x) = 1.39(-0.3914)$$

$$268.6482 - 3x = -0.544$$

$$-3x = -0.544 - 268.6482$$

$$x = \frac{269.1922}{3} = 89.7307\%$$

26. Untuk Gerakan Menurunkan (*Lowering*) Kardus Berisi Potongan Kayu yang sudah digerinda dari Tangan menuju Lantai Stasiun Press:

TABLE 5M - MALE POPULATION PERCENTAGES FOR LOWERING TASKS
BEGINNING BETWEEN KNUCKLE AND SHOULDER HEIGHT (≥31" AND ≤57")

HAND DISTANCE		7 INCHES					10 INCHES					15 INCHES					
		15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h	
OBJECT WEIGHT (POUNDS)	FREQUENCY	LOWERING DISTANCE (INCHES)															
	ONE LOWER EVERY																
75	30	15	17	20	36	62	-	-	-	22	49	-	-	-	-	20	
	20	21	25	33	51	73	-	13	19	36	62	-	-	-	-	34	
	10	41	46	54	68	83	27	31	39	56	76	-	-	-	12	27	54
72	30	19	21	24	41	66	-	-	12	26	54	-	-	-	-	25	
	20	26	30	38	55	76	14	17	24	41	66	-	-	-	-	14	39
	10	46	50	58	71	85	32	36	44	60	79	-	11	16	31	58	
69	30	24	25	29	47	70	12	13	16	32	59	-	-	-	-	30	
	20	31	35	44	60	79	18	21	29	46	70	-	-	-	-	18	44
	10	51	55	63	75	87	37	41	49	64	81	12	14	20	37	63	
66	30	29	31	35	52	74	16	17	21	37	63	-	-	-	-	11	35
	20	36	41	49	64	81	22	26	34	51	73	-	-	-	-	22	50
	10	56	60	67	78	89	42	47	54	69	84	15	18	25	42	67	
63	30	34	36	41	57	77	21	22	26	43	68	-	-	-	-	15	41
	20	42	47	55	69	84	28	32	40	57	77	-	-	-	13	28	55
	10	61	65	71	81	+	48	52	59	72	86	20	23	31	48	71	
60	30	40	43	47	62	80	26	28	32	49	72	-	-	-	-	20	47
	20	48	52	60	73	86	34	38	46	62	80	-	12	18	34	60	
	10	68	69	75	83	+	54	58	64	76	88	25	29	37	54	75	
57	30	47	49	53	67	83	32	34	38	55	76	-	-	-	12	26	53
	20	54	58	65	76	88	40	44	52	67	83	14	17	23	40	65	
	10	71	73	78	86	+	59	63	69	79	89	32	35	43	59	78	
54	30	53	55	59	72	85	39	41	45	61	79	13	14	16	32	59	
	20	60	64	70	80	+	47	51	58	71	85	19	22	29	47	70	
	10	75	77	81	88	+	65	68	74	82	+	38	42	50	65	82	
51	30	60	61	65	76	88	46	48	52	66	82	18	20	22	39	65	
	20	66	69	74	83	+	53	57	64	76	88	25	29	36	53	75	
	10	79	81	84	+	+	70	73	78	85	+	45	49	56	70	84	
48	30	66	67	70	80	+	53	55	58	72	86	25	26	29	47	70	
	20	71	74	79	86	+	60	64	70	80	+	32	36	44	60	79	
	10	82	84	87	+	+	75	77	81	88	+	53	56	63	75	87	
45	30	71	73	75	83	+	60	62	65	76	88	32	34	37	54	75	
	20	76	78	82	88	+	67	70	75	83	+	40	44	52	66	82	
	10	85	87	89	+	+	79	81	84	+	+	60	63	69	79	89	
42	30	76	78	80	87	+	67	68	71	81	+	41	43	46	62	80	
	20	80	82	86	+	+	72	75	79	86	+	49	53	59	72	86	
	10	88	89	+	+	+	83	85	87	+	+	67	69	74	83	+	
39	30	81	82	84	89	+	73	74	77	85	+	50	52	55	69	84	
	20	84	86	88	+	+	78	80	83	89	+	57	61	67	78	88	
	10	+	+	+	+	+	86	88	+	+	+	73	75	79	85	+	
36	30	85	86	87	+	+	79	80	82	88	+	59	61	63	75	87	
	20	88	89	+	+	+	82	84	87	+	+	65	68	73	82	+	
	10	+	+	+	+	+	89	+	+	+	+	78	80	84	89	+	
33	30	88	89	+	+	+	84	84	86	+	+	68	69	71	81	+	
	20	+	+	+	+	+	86	88	+	+	+	73	75	79	86	+	
	10	+	+	+	+	+	+	+	+	+	+	83	85	87	+	+	
30	30	+	+	+	+	+	88	88	89	+	+	75	76	78	85	+	
	20	+	+	+	+	+	+	+	+	+	+	80	81	84	+	+	
	10	+	+	+	+	+	+	+	+	+	+	87	89	+	+	+	
27	30	+	+	+	+	+	+	+	+	+	+	82	83	84	89	+	
	20	+	+	+	+	+	+	+	+	+	+	85	86	89	+	+	
	10	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
24	30	+	+	+	+	+	+	+	+	+	+	87	88	89	+	+	
	20	+	+	+	+	+	+	+	+	+	+	89	+	+	+	+	
	10	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	

+ = GREATER THAN 90% - = LESS THAN 10%+

Didapatkan Jarak Tangan: 7.6 inci (yang terletak diantara 7 inci dan 10 inci), Berat Benda: 40.75 pound (terletak diantara 39 pound dan 42 pound), Frekuensi Pengangkatannya: 4 jam sekali (terletak diantara 5 menit dan 8 jam), dan Jarak Penurunannya: 12.32 inci (Terletak diantara 10 inci dan 20 inci). Berikut ini merupakan hasil interpolasinya:

Untuk Berat 42 lb, Jarak Tangan 7 Inchi: 90%

Untuk Berat 42 lb, Jarak Tangan 10 Inchi, Jarak Penurunan 20 Inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 83}{90 - x}$$

$$7.917(90 - x) = 4(7)$$

$$712.53 - 7.917x = 28$$

$$-7.917x = 28 - 712.53$$

$$x = \frac{684.53}{7.917} = 86.4633\%$$

Untuk Berat 42 lb, Jarak Tangan 10 Inchi, Jarak Penurunan 10 Inchi: 90%

Untuk Berat 39 lb, Jarak Tangan 7 Inchi: 90%

Untuk Berat 39 lb, Jarak Tangan 10 Inchi, Jarak Penurunan 20 Inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 89}{90 - x}$$

$$7.917(90 - x) = 4(1)$$

$$712.53 - 7.917x = 4$$

$$-7.917x = 4 - 712.53$$

$$x = \frac{708.53}{7.917} = 89.4948\%$$

Untuk Berat 39 lb, Jarak Tangan 10 Inchi, Jarak Penurunan 10 Inchi: 90%

Untuk Berat 42 lb, Jarak Tangan 10 Inchi:

$$\frac{20 - 10}{20 - 12.32} = \frac{86.4633 - 90}{86.4633 - x}$$

$$10(86.4633 - x) = 7.68(-3.5367)$$

$$864.633 - 10x = -27.1619$$

$$-10x = -27.1619 - 864.633$$

$$x = \frac{891.7949}{10} = 89.1794\%$$

Untuk Berat 39 lb, Jarak Tangan 10 Inchi:

$$\frac{20 - 10}{20 - 12.32} = \frac{89.4948 - 90}{89.4948 - x}$$

$$10(89.4948 - x) = 7.68(-0.5052)$$

$$894.948 - 10x = -3.8799$$

$$-10x = -3.8799 - 894.948$$

$$x = \frac{898.8279}{10} = 89.8828\%$$

Untuk Berat 42 lb:

$$\frac{10 - 7}{10 - 7.6} = \frac{89.1794 - 90}{89.1794 - x}$$

$$3(89.1794 - x) = 2.4(-0.8026)$$

$$267.5382 - 3x = -1.9694$$

$$-3x = -1.9694 - 267.5382$$

$$x = \frac{269.5076}{3} = 89.8359\%$$

Untuk Berat 39 lb:

$$\frac{10 - 7}{10 - 7.6} = \frac{89.4948 - 90}{89.4948 - x}$$

$$3(89.4948 - x) = 2.4(-0.5052)$$

$$268.4844 - 3x = -1.2125$$

$$-3x = -1.2125 - 268.4844$$

$$x = \frac{269.6969}{3} = 89.899\%$$

Interpolasi Akhir:

$$\frac{42 - 39}{42 - 40.75} = \frac{89.8359 - 89.899}{89.8359 - x}$$

$$3(89.8359 - x) = 1.25(-0.0631)$$

$$269.5077 - 3x = -0.0789$$

$$-3x = -0.0789 - 269.5077$$

$$x = \frac{269.5866}{3} = 89.8622\%$$

27. Untuk Gerakan Menurunkan (*Lowering*) Kardus Berisi Produk Hasil Stasiun Pola dari Gerobak Pengangkut menuju Lantai Cat Semprot:

**TABLE 4M - MALE POPULATION PERCENTAGES FOR LOWERING TASKS
BEGINNING BELOW KNUCKLE HEIGHT (<31")**

HAND DISTANCE		7 INCHES					10 INCHES					15 INCHES					
		15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h	
OBJECT WEIGHT (POUNDS)	87	30	-	-	23	47	73	-	-	11	31	62	-	-	-	-	33
		20	-	14	28	51	76	-	-	14	36	66	-	-	-	-	38
		10	21	28	42	64	83	-	14	26	50	75	-	-	-	20	52
	84	30	-	13	27	51	75	-	-	14	35	65	-	-	-	-	37
		20	-	17	32	55	78	-	-	17	40	69	-	-	-	-	42
		10	24	32	46	67	84	11	17	30	54	77	-	-	-	24	55
	81	30	-	16	31	55	78	-	-	17	40	69	-	-	-	-	41
		20	13	20	36	59	80	-	-	21	44	72	-	-	-	-	46
		10	29	36	50	70	86	14	20	35	58	80	-	-	-	-	59
	78	30	13	20	35	58	80	-	-	21	44	71	-	-	-	-	46
		20	16	24	40	62	82	-	11	25	49	74	-	-	-	-	50
		10	33	40	54	72	87	17	24	39	61	81	-	-	11	32	63
	75	30	16	24	40	62	82	-	11	25	49	74	-	-	-	-	50
		20	20	28	45	66	84	-	14	29	53	77	-	-	-	-	54
		10	37	45	58	75	88	21	29	44	65	83	-	-	15	36	66
	72	30	20	28	45	66	84	-	14	29	53	77	-	-	-	-	54
		20	24	33	49	69	85	11	18	34	57	79	-	-	-	-	59
		10	42	50	62	78	89	25	33	48	68	85	-	-	18	41	70
	69	30	24	33	50	69	85	11	18	34	57	79	-	-	-	-	59
		20	29	38	54	72	87	14	22	39	61	81	-	-	11	32	63
		10	47	54	66	80	+	30	38	53	72	87	-	-	23	46	73
	66	30	29	38	54	73	87	15	23	39	62	82	-	-	-	-	63
		20	34	43	59	76	88	18	27	44	66	84	-	-	-	-	67
		10	52	59	69	82	+	35	44	58	75	88	-	-	13	27	76
63	30	35	44	59	76	89	19	28	45	66	84	-	-	-	-	67	
	20	40	49	63	78	+	23	32	49	69	85	-	-	-	-	70	
	10	57	63	73	84	+	41	49	62	78	89	-	-	17	33	79	
60	30	40	49	64	79	+	24	33	50	70	86	-	-	-	-	71	
	20	45	54	67	81	+	28	38	55	73	87	-	-	-	-	74	
	10	62	67	76	86	+	46	54	66	80	+	14	21	38	61	81	
57	30	46	55	68	82	+	29	39	56	74	88	-	-	-	-	75	
	20	51	59	71	83	+	34	44	60	76	89	-	-	13	30	77	
	10	66	72	79	88	+	52	59	71	83	+	18	27	44	66	84	
54	30	52	60	72	84	+	36	45	61	77	89	-	-	14	32	78	
	20	57	64	75	86	+	40	50	65	80	+	-	-	18	36	80	
	10	71	75	82	+	+	58	64	74	85	+	24	33	50	70	86	
51	30	58	66	76	86	+	42	52	66	80	+	11	19	38	61	81	
	20	62	69	79	88	+	47	56	70	82	+	14	23	43	65	83	
	10	75	79	85	+	+	63	69	78	87	+	30	40	56	74	88	
48	30	64	71	80	88	+	49	58	71	83	+	16	26	45	66	84	
	20	68	74	82	89	+	54	62	74	85	+	20	30	50	70	86	
	10	78	82	87	+	+	68	74	81	89	+	37	47	62	78	+	
45	30	70	75	83	+	+	56	64	76	86	+	22	33	52	71	86	
	20	73	78	85	+	+	60	68	78	87	+	26	38	57	74	88	
	10	82	85	89	+	+	73	78	84	+	+	44	54	68	81	+	
42	30	75	79	86	+	+	63	70	80	88	+	30	41	60	76	89	
	20	77	81	87	+	+	67	73	82	89	+	34	46	63	79	+	
	10	85	87	+	+	+	78	82	87	+	+	52	61	73	85	+	
39	30	79	83	88	+	+	69	75	83	+	+	38	49	66	80	+	
	20	81	85	89	+	+	72	78	85	+	+	43	54	70	82	+	
	10	88	+	+	+	+	82	85	89	+	+	60	67	78	87	+	
36	30	83	+	+	+	+	75	80	87	+	+	47	58	73	84	+	
	20	85	+	+	+	+	78	82	88	+	+	52	62	75	86	+	
	10	+	+	+	+	+	85	88	+	+	+	67	74	82	+	+	

+ = GREATER THAN 90% - = LESS THAN 10%

Didapatkan Jarak Tangan: 7.28 inchi (yang terletak diantara 7 inchi dan 10 inchi), Berat Benda: 63.44 pound (terletak diantara 63 pound dan 66 pound), Frekuensi Pengangkatannya: 8 jam sekali, dan Jarak Penurunannya: 19.57 inchi (Terletak diantara 10 inchi dan 20 inchi). Berikut ini merupakan hasil interpolasinya:

Untuk Berat 66 lb, Jarak Tangan 7 Inchi:

$$\frac{20 - 10}{20 - 19.57} = \frac{88 - 90}{88 - x}$$

$$10(88 - x) = 0.43(-2)$$

$$880 - 10x = -0.86$$

$$-10x = -0.86 - 880$$

$$x = \frac{880.86}{10} = 88.086\%$$

Untuk Berat 66 lb, Jarak Tangan 10 Inchi:

$$\frac{20 - 10}{20 - 19.57} = \frac{84 - 88}{84 - x}$$

$$10(84 - x) = 0.43(-4)$$

$$840 - 10x = -1.72$$

$$-10x = -1.72 - 840$$

$$x = \frac{841.72}{10} = 84.172\%$$

Untuk Berat 63 lb, Jarak Tangan 7 Inchi: 90%

Untuk Berat 63 lb, Jarak Tangan 10 Inchi:

$$\frac{20 - 10}{20 - 19.57} = \frac{85 - 89}{85 - x}$$

$$10(85 - x) = 0.43(-4)$$

$$850 - 10x = -1.72$$

$$-10x = -1.72 - 850$$

$$x = \frac{851.72}{10} = 85.172\%$$

Untuk Berat 66 lb:

$$\frac{10 - 7}{10 - 7.28} = \frac{84.172 - 88.086}{84.172 - x}$$

$$3(84.172 - x) = 2.72(-3.914)$$

$$252.516 - 3x = -10.6461$$

$$-3x = -10.6461 - 252.516$$

$$x = \frac{263.1621}{3} = 87.7207\%$$

Untuk Berat 63 lb:

$$\frac{10 - 7}{10 - 7.28} = \frac{85.172 - 90}{85.172 - x}$$

$$3(85.172 - x) = 2.72(-4.828)$$

$$255.516 - 3x = -13.1322$$

$$-3x = -13.1322 - 255.516$$

$$x = \frac{268.6482}{3} = 89.5494\%$$

Interpolasi Akhir:

$$\frac{66 - 63}{66 - 63.44} = \frac{87.7207 - 89.5494}{87.7207 - x}$$

$$3(87.7207 - x) = 2.56(-1.8287)$$

$$263.1621 - 3x = -4.6815$$

$$-3x = -4.6815 - 263.1621$$

$$x = \frac{267.8436}{3} = 89.2812\%$$

28. Untuk Gerakan Menurunkan (*Lowering*) Kardus Berisi Produk Hasil Stasiun Press dari Gerobak Pengangkut menuju Lantai Cat Kuas:

TABLE 4M - MALE POPULATION PERCENTAGES FOR LOWERING TASKS
BEGINNING BELOW KNUCKLE HEIGHT (<31")

HAND DISTANCE		7 INCHES					10 INCHES					15 INCHES					
		15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h	
OBJECT WEIGHT (POUNDS)	87	30	-	-	23	47	73	-	-	11	31	62	-	-	-	-	33
		20	-	14	28	51	76	-	-	14	36	66	-	-	-	-	38
		10	21	28	42	64	83	-	14	26	50	75	-	-	-	20	52
	84	30	-	13	27	51	75	-	-	14	35	65	-	-	-	-	37
		20	-	17	32	55	78	-	-	17	40	69	-	-	-	12	42
		10	24	32	46	67	84	11	17	30	54	77	-	-	-	24	55
	81	30	-	16	31	55	78	-	-	17	40	69	-	-	-	12	41
		20	13	20	36	59	80	-	-	21	44	72	-	-	-	15	46
		10	29	36	50	70	86	14	20	35	58	80	-	-	-	28	59
	78	30	13	20	35	58	80	-	-	21	44	71	-	-	-	15	46
		20	16	24	40	62	82	-	11	25	49	74	-	-	-	19	50
		10	33	40	54	72	87	17	24	39	61	81	-	-	11	32	63
	75	30	16	24	40	62	82	-	11	25	49	74	-	-	-	19	50
		20	20	28	45	66	84	-	14	29	53	77	-	-	-	23	54
		10	37	45	58	75	88	21	29	44	65	83	-	-	15	36	66
	72	30	20	28	45	66	84	-	14	29	53	77	-	-	-	23	54
		20	24	33	49	69	85	11	18	34	57	79	-	-	-	27	59
		10	42	50	62	78	89	25	33	48	68	85	-	-	18	41	70
	69	30	24	33	50	69	85	11	18	34	57	79	-	-	-	27	59
		20	29	38	54	72	87	14	22	39	61	81	-	-	11	32	63
		10	47	54	66	80	+	30	38	53	72	87	-	-	23	46	73
	66	30	29	38	54	73	87	15	23	39	62	82	-	-	12	32	63
		20	34	43	59	76	88	18	27	44	66	84	-	-	15	37	67
		10	52	59	69	82	+	35	44	58	75	88	-	-	13	27	51
	63	30	35	44	59	76	89	19	28	45	66	84	-	-	15	38	67
		20	40	49	63	78	+	23	32	49	69	85	-	-	19	43	70
		10	57	63	73	84	+	41	49	62	78	89	-	-	17	33	56
	60	30	40	49	64	79	+	24	33	50	70	86	-	-	20	43	71
20		45	54	67	81	+	28	38	55	73	87	-	-	24	48	74	
10		62	67	76	86	+	46	54	66	80	+	14	21	38	61	81	
57	30	46	55	68	82	+	29	39	56	74	88	-	-	26	49	75	
	20	51	59	71	83	+	34	44	60	76	89	-	-	13	30	54	77
	10	66	72	79	88	+	52	59	71	83	+	18	27	44	66	84	
54	30	52	60	72	84	+	36	45	61	77	89	-	-	14	32	55	78
	20	57	64	75	86	+	40	50	65	80	+	-	-	18	36	59	80
	10	71	75	82	+	+	58	64	74	85	+	24	33	50	70	86	
51	30	58	66	76	86	+	42	52	66	80	+	11	19	38	61	81	
	20	62	69	79	88	+	47	56	70	82	+	14	23	43	65	83	
	10	75	79	85	+	+	63	69	78	87	+	30	40	56	74	88	
48	30	64	71	80	88	+	49	58	71	83	+	16	26	45	66	84	
	20	68	74	82	89	+	54	62	74	85	+	20	30	50	70	86	
	10	78	82	87	+	+	68	74	81	89	+	37	47	62	78	+	
45	30	70	75	83	+	+	56	64	76	86	+	22	33	52	71	86	
	20	73	78	85	+	+	60	68	78	87	+	26	38	57	74	88	
	10	82	85	89	+	+	73	78	84	+	+	44	54	68	81	+	
42	30	75	79	86	+	+	63	70	80	88	+	30	41	60	76	89	
	20	77	81	87	+	+	67	73	82	89	+	34	46	63	79	+	
	10	85	87	+	+	+	78	82	87	+	+	52	61	73	85	+	
39	30	79	83	88	+	+	69	75	83	+	+	38	49	66	80	+	
	20	81	85	89	+	+	72	78	85	+	+	43	54	70	82	+	
	10	88	+	+	+	+	82	85	89	+	+	60	67	78	87	+	
36	30	83	+	+	+	+	75	80	87	+	+	47	58	73	84	+	
	20	85	+	+	+	+	78	82	88	+	+	52	62	75	86	+	
	10	+	+	+	+	+	85	88	+	+	+	67	74	82	+	+	

+ = GREATER THAN 90% - = LESS THAN 10%

Didapatkan Jarak Tangan: 7.4 inchi (yang terletak diantara 7 inchi dan 10 inchi), Berat Benda: 58.81 pound (terletak diantara 57 pound dan 60 pound), Frekuensi Pengangkatannya: 8 jam sekali, dan Jarak Penurunannya: 13.46 inchi (Terletak diantara 10 inchi dan 20 inchi). Berikut ini merupakan hasil interpolasinya:

Untuk Berat 60 lb, Jarak Tangan 7 Inchi: 90%

Untuk Berat 60 lb, Jarak Tangan 10 Inchi:

$$\frac{20 - 10}{20 - 13.46} = \frac{87 - 90}{87 - x}$$

$$10(87 - x) = 6.54(-3)$$

$$870 - 10x = -19.62$$

$$-10x = -19.62 - 870$$

$$x = \frac{889.62}{10} = 88.962\%$$

Untuk Berat 57 lb, Jarak Tangan 7 Inchi: 90%

Untuk Berat 57 lb, Jarak Tangan 10 Inchi:

$$\frac{20 - 10}{20 - 13.46} = \frac{89 - 90}{89 - x}$$

$$10(89 - x) = 6.54(-1)$$

$$890 - 10x = -6.54$$

$$-10x = -6.54 - 890$$

$$x = \frac{896.54}{10} = 89.654\%$$

Untuk Berat 60 lb:

$$\frac{10 - 7}{10 - 7.4} = \frac{88.962 - 90}{88.962 - x}$$

$$3(88.962 - x) = 2.6(-1.038)$$

$$266.886 - 3x = -2.6988$$

$$-3x = -2.6988 - 266.886$$

$$x = \frac{269.5848}{3} = 89.8616\%$$

Untuk Berat 57 lb:

$$\frac{10 - 7}{10 - 7.4} = \frac{89.654 - 90}{89.654 - x}$$

$$3(89.654 - x) = 2.6(-0.346)$$

$$268.962 - 3x = -0.8996$$

$$-3x = -0.8996 - 268.962$$

$$x = \frac{269.8616}{3} = 89.9539\%$$

Interpolasi Akhir:

$$\frac{60 - 57}{60 - 58.81} = \frac{89.8616 - 89.9539}{89.8616 - x}$$

$$3(89.8616 - x) = 1.19(-0.0923)$$

$$269.5848 - 3x = -0.1098$$

$$-3x = -0.1098 - 269.5848$$

$$x = \frac{269.6946}{3} = 89.8982\%$$

29. Untuk Gerakan Menurunkan (*Lowering*) Kardus Berisi Produk Mainan Pola dari Tangan menuju Lantai Stasiun Packaging:

TABLE 5M - MALE POPULATION PERCENTAGES FOR LOWERING TASKS
BEGINNING BETWEEN KNUCKLE AND SHOULDER HEIGHT ($\geq 31"$ AND $\leq 57"$)

HAND DISTANCE		7 INCHES					10 INCHES					15 INCHES									
		15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h					
OBJECT WEIGHT (POUNDS)	FREQUENCY ONE LOWER EVERY	75	30	15	17	20	36	62	-	-	-	22	49	-	-	-	-	20			
		20	21	25	33	51	73	-	13	19	36	62	-	-	-	-	34				
		10	41	46	54	68	83	27	31	39	56	76	-	-	-	12	27	54			
		72	30	19	21	24	41	66	-	-	-	12	26	54	-	-	-	-	25		
		20	26	30	38	55	76	14	17	24	41	66	-	-	-	-	14	39			
		10	46	50	58	71	85	32	36	44	60	79	-	-	-	11	16	31	58		
		69	30	24	25	29	47	70	12	13	16	32	59	-	-	-	-	-	30		
		20	31	35	44	60	79	18	21	29	46	70	-	-	-	-	-	18	44		
		10	51	55	63	75	87	37	41	49	64	81	12	14	20	37	63				
		66	30	29	31	35	52	74	16	17	21	37	63	-	-	-	-	-	11	36	
		20	36	41	49	64	81	22	26	34	51	73	-	-	-	-	-	22	50		
		10	56	60	67	78	89	42	47	54	69	84	15	18	25	42	67				
		63	30	34	36	41	57	77	21	22	26	43	68	-	-	-	-	-	15	41	
		20	42	47	55	69	84	28	32	40	57	77	-	-	-	-	-	13	28	55	
		10	61	65	71	81	+	48	52	59	72	86	20	23	31	48	71				
		60	30	40	43	47	62	80	26	28	32	49	72	-	-	-	-	-	20	47	
		20	48	52	60	73	86	34	38	46	62	80	-	-	-	-	-	12	18	34	60
		10	68	69	75	83	+	54	58	64	76	88	25	29	37	54	75				
		57	30	47	49	53	67	83	32	34	38	55	76	-	-	-	-	-	12	26	53
		20	54	58	65	76	88	40	44	52	67	83	14	17	23	40	65				
		10	71	73	78	86	+	59	63	69	79	89	32	35	43	59	78				
		54	30	53	55	59	72	85	39	41	45	61	79	13	14	16	32	59			
		20	60	64	70	80	+	47	51	58	71	85	19	22	29	47	70				
		10	75	77	81	88	+	65	68	74	82	+	38	42	50	65	82				
		51	30	60	61	65	76	88	46	48	52	66	82	18	20	22	39	65			
		20	66	69	74	83	+	53	57	64	76	88	25	29	36	53	75				
		10	79	81	84	+	+	70	73	78	85	+	45	49	56	70	84				
		48	30	66	67	70	80	+	53	55	58	72	85	25	26	29	47	70			
		20	71	74	79	86	+	60	64	70	80	+	32	36	44	60	79				
		10	82	84	87	+	+	75	77	81	88	+	53	56	63	75	87				
		45	30	71	73	75	83	+	60	62	65	76	88	32	34	37	54	75			
		20	76	78	82	88	+	67	70	75	83	+	40	44	52	66	82				
		10	85	87	89	+	+	79	81	84	+	+	60	63	69	79	89				
		42	30	76	78	80	87	+	67	68	71	81	+	41	43	46	62	80			
		20	80	82	86	+	+	72	75	79	86	+	49	53	59	72	86				
		10	88	89	+	+	+	83	85	87	+	+	67	69	74	83	+				
		39	30	81	82	84	89	+	73	74	77	85	+	50	52	55	69	84			
		20	84	86	88	+	+	78	80	83	89	+	57	61	67	78	88				
		10	+	+	+	+	+	86	88	+	+	+	73	75	79	86	+				
		36	30	85	86	87	+	+	79	80	82	88	+	59	61	63	75	87			
		20	88	89	+	+	+	82	84	87	+	+	65	68	73	82	+				
		10	+	+	+	+	+	89	+	+	+	+	78	80	84	89	+				
		33	30	88	89	+	+	+	84	84	86	+	+	68	69	71	81	+			
		20	+	+	+	+	+	86	88	+	+	+	73	75	79	86	+				
		10	+	+	+	+	+	+	+	+	+	+	83	85	87	+	+				
		30	30	+	+	+	+	+	88	88	89	+	+	75	76	78	85	+			
		20	+	+	+	+	+	+	+	+	+	+	80	81	84	+	+				
		10	+	+	+	+	+	+	+	+	+	+	87	89	+	+	+				
		27	30	+	+	+	+	+	+	+	+	+	+	82	83	84	89	+			
		20	+	+	+	+	+	+	+	+	+	+	85	86	89	+	+				
		10	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+				
		24	30	+	+	+	+	+	+	+	+	+	+	87	88	89	+	+			
		20	+	+	+	+	+	+	+	+	+	+	89	+	+	+	+				
		10	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+				

+ = GREATER THAN 90% - = LESS THAN 10%+

Didapatkan Jarak Tangan: 7.83 inchi (yang terletak diantara 7 inchi dan 10 inchi), Berat Benda: 40.97 pound (terletak diantara 39 pound dan 42 pound), Frekuensi Pengangkatannya: 4 jam sekali (terletak diantara 5 menit dan 8 jam), dan Jarak Penurunannya: 11.65 inchi (Terletak diantara 10 inchi dan 20 inchi). Berikut ini merupakan hasil interpolasinya:

Untuk Berat 42 lb, Jarak Tangan 7 Inchi: 90%

Untuk Berat 42 lb, Jarak Tangan 10 Inchi, Jarak Penurunan 20 Inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 83}{90 - x}$$

$$7.917(90 - x) = 4(7)$$

$$712.53 - 7.917x = 28$$

$$-7.917x = 28 - 712.53$$

$$x = \frac{684.53}{7.917} = 86.4633\%$$

Untuk Berat 42 lb, Jarak Tangan 10 Inchi, Jarak Penurunan 10 Inchi: 90%

Untuk Berat 39 lb, Jarak Tangan 7 Inchi: 90%

Untuk Berat 39 lb, Jarak Tangan 10 Inchi, Jarak Penurunan 20 Inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 89}{90 - x}$$

$$7.917(90 - x) = 4(1)$$

$$712.53 - 7.917x = 4$$

$$-7.917x = 4 - 712.53$$

$$x = \frac{708.53}{7.917} = 89.4948\%$$

Untuk Berat 39 lb, Jarak Tangan 10 Inchi, Jarak Penurunan 10 Inchi: 90%

Untuk Berat 42 lb, Jarak Tangan 10 Inchi:

$$\frac{20 - 10}{20 - 11.65} = \frac{86.4633 - 90}{86.4633 - x}$$

$$10(86.4633 - x) = 8.35(-3.5367)$$

$$864.633 - 10x = -29.5314$$

$$-10x = -29.5314 - 864.633$$

$$x = \frac{894.1644}{10} = 89.4164\%$$

Untuk Berat 39 lb, Jarak Tangan 10 Inchi:

$$\frac{20 - 10}{20 - 11.65} = \frac{89.4948 - 90}{89.4948 - x}$$

$$10(89.4948 - x) = 8.35(-0.5052)$$

$$894.948 - 10x = -4.2184$$

$$-10x = -4.2184 - 894.948$$

$$x = \frac{899.1664}{10} = 89.9166\%$$

Untuk Berat 42 lb:

$$\frac{10 - 7}{10 - 7.83} = \frac{89.4164 - 90}{89.4164 - x}$$

$$3(89.4164 - x) = 2.17(-0.5836)$$

$$268.2492 - 3x = -1.2664$$

$$-3x = -1.2664 - 268.2492$$

$$x = \frac{269.5156}{3} = 89.8385\%$$

Untuk Berat 39 lb:

$$\frac{10 - 7}{10 - 7.83} = \frac{89.9166 - 90}{89.9166 - x}$$

$$3(89.9166 - x) = 2.17(-0.0834)$$

$$269.7498 - 3x = -0.1814$$

$$-3x = -0.1814 - 269.7498$$

$$x = \frac{269.9308}{3} = 89.9769\%$$

Interpolasi Akhir:

$$\frac{42 - 39}{42 - 40.97} = \frac{89.8385 - 89.9769}{89.8385 - x}$$

$$3(89.8385 - x) = 1.03(-0.1384)$$

$$269.5155 - 3x = -0.1426$$

$$-3x = -0.1426 - 269.5155$$

$$x = \frac{269.6641}{3} = 89.888\%$$

30. Untuk Gerakan Menurunkan (*Lowering*) Kardus Berisi Produk Mainan Puzzle dari Tangan menuju Lantai Stasiun Packaging:

TABLE 5M - MALE POPULATION PERCENTAGES FOR LOWERING TASKS
BEGINNING BETWEEN KNUCKLE AND SHOULDER HEIGHT (≥31" AND ≤57")

HAND DISTANCE		7 INCHES					10 INCHES					15 INCHES							
FREQUENCY ONE LOWER EVERY		15s	30s	1m	5m	8h	15s	30s	1m	5m	8h	15s	30s	1m	5m	8h			
OBJECT WEIGHT (POUNDS)	LOWERING DISTANCE (INCHES)	75	30	15	17	20	36	62	-	-	-	22	49	-	-	-	-	20	
		20	21	25	33	51	73	-	13	19	36	62	-	-	-	-	14	39	
		10	41	46	54	68	83	27	31	39	56	76	-	-	12	27	54	-	
		72	30	19	21	24	41	66	-	-	12	26	54	-	-	-	-	26	
		20	26	30	38	55	76	14	17	24	41	66	-	-	-	-	14	39	
		10	46	50	58	71	85	32	36	44	60	79	-	11	16	31	58	-	
		69	30	24	25	29	47	70	12	13	16	32	59	-	-	-	-	30	
		20	31	35	44	60	79	18	21	29	46	70	-	-	-	-	18	44	
		10	51	55	63	75	87	37	41	49	64	81	12	14	20	37	63	-	
		66	30	29	31	35	52	74	16	17	21	37	63	-	-	-	-	11	35
		20	36	41	49	64	81	22	26	34	51	73	-	-	-	-	22	50	
		10	56	60	67	78	89	42	47	54	69	84	15	18	25	42	67	-	
		63	30	34	36	41	57	77	21	22	26	43	68	-	-	-	-	15	41
		20	42	47	55	69	84	28	32	40	57	77	-	-	-	13	28	55	
		10	61	65	71	81	+	48	52	59	72	86	20	23	31	48	71	-	
		60	30	40	43	47	62	80	26	28	32	49	72	-	-	-	-	20	47
		20	48	52	60	73	86	34	38	46	62	80	-	12	18	34	60	-	
		10	68	69	75	83	+	54	58	64	76	88	25	29	37	54	75	-	
		57	30	47	49	53	67	83	32	34	38	55	76	-	-	-	12	26	53
		20	54	58	65	76	88	40	44	52	67	83	14	17	23	40	65	-	
10	71	73	78	86	+	59	63	69	79	89	32	35	43	59	78	-			
54	30	53	55	59	72	85	39	41	45	61	79	13	14	16	32	59			
20	60	64	70	80	+	47	51	58	71	85	19	22	29	47	70	-			
10	75	77	81	88	+	65	68	74	82	+	38	42	50	65	82	-			
51	30	60	61	65	76	88	46	48	52	66	82	18	20	22	39	65			
20	66	69	74	83	+	53	57	64	76	88	25	29	36	53	75	-			
10	79	81	84	+	+	70	73	78	85	+	45	49	56	70	84	-			
48	30	66	67	70	80	+	53	55	58	72	85	26	26	29	47	70			
20	71	74	79	86	+	60	64	70	80	+	32	36	44	60	79	-			
10	82	84	87	+	+	75	77	81	88	+	53	56	63	75	87	-			
45	30	71	73	75	83	+	60	62	65	76	88	32	34	37	54	75			
20	76	78	82	88	+	67	70	75	83	+	40	44	52	66	82	-			
10	85	87	89	+	+	79	81	84	+	+	60	63	69	79	89	-			
42	30	76	78	80	87	+	67	68	71	81	+	41	43	46	62	80			
20	80	82	86	+	+	72	75	79	86	+	49	53	59	72	86	-			
10	88	89	+	+	+	83	85	87	+	+	67	69	74	83	+	-			
39	30	81	82	84	89	+	73	74	77	85	+	50	52	55	69	84			
20	84	86	88	+	+	78	80	83	89	+	57	61	67	78	88	-			
10	+	+	+	+	+	86	88	+	+	+	73	75	79	86	+	-			
36	30	85	86	87	+	+	79	80	82	88	+	59	61	63	75	87			
20	88	89	+	+	+	82	84	87	+	+	65	68	73	82	+	-			
10	+	+	+	+	+	89	+	+	+	+	78	80	84	89	+	-			
33	30	88	89	+	+	+	84	84	86	+	+	68	69	71	81	+			
20	+	+	+	+	+	86	88	+	+	+	73	75	79	86	+	-			
10	+	+	+	+	+	+	+	+	+	+	83	85	87	+	+	-			
30	30	+	+	+	+	+	88	88	89	+	+	75	76	78	85	+			
20	+	+	+	+	+	+	+	+	+	+	80	81	84	+	+	-			
10	+	+	+	+	+	+	+	+	+	+	87	89	+	+	+	-			
27	30	+	+	+	+	+	+	+	+	+	82	83	84	89	+	-			
20	+	+	+	+	+	+	+	+	+	+	85	86	89	+	+	-			
10	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-			
24	30	+	+	+	+	+	+	+	+	+	87	88	89	+	+	-			
20	+	+	+	+	+	+	+	+	+	+	89	+	+	+	+	-			
10	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-			

+ = GREATER THAN 90% - = LESS THAN 10%+

Didapatkan Jarak Tangan: 7.64 inchi (yang terletak diantara 7 inchi dan 10 inchi), Berat Benda: 41.63 pound (terletak diantara 39 pound dan 42 pound), Frekuensi Pengangkatannya:

4 jam sekali (terletak diantara 5 menit dan 8 jam), dan Jarak Penurunannya: 12.36 inchi (Terletak diantara 10 inchi dan 20 inchi). Berikut ini merupakan hasil interpolasinya:

Untuk Berat 42 lb, Jarak Tangan 7 Inchi: 90%

Untuk Berat 42 lb, Jarak Tangan 10 Inchi, Jarak Penurunan 20 Inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 83}{90 - x}$$

$$7.917(90 - x) = 4(7)$$

$$712.53 - 7.917x = 28$$

$$-7.917x = 28 - 712.53$$

$$x = \frac{684.53}{7.917} = 86.4633\%$$

Untuk Berat 42 lb, Jarak Tangan 10 Inchi, Jarak Penurunan 10 Inchi: 90%

Untuk Berat 39 lb, Jarak Tangan 7 Inchi: 90%

Untuk Berat 39 lb, Jarak Tangan 10 Inchi, Jarak Penurunan 20 Inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 89}{90 - x}$$

$$7.917(90 - x) = 4(1)$$

$$712.53 - 7.917x = 4$$

$$-7.917x = 4 - 712.53$$

$$x = \frac{708.53}{7.917} = 89.4948\%$$

Untuk Berat 39 lb, Jarak Tangan 10 Inchi, Jarak Penurunan 10 Inchi: 90%

Untuk Berat 42 lb, Jarak Tangan 10 Inchi:

$$\frac{20 - 10}{20 - 12.36} = \frac{86.4633 - 90}{86.4633 - x}$$

$$10(86.4633 - x) = 7.64(-3.5367)$$

$$864.633 - 10x = -27.1732$$

$$-10x = -27.1732 - 864.633$$

$$x = \frac{891.8062}{10} = 89.1806\%$$

Untuk Berat 39 lb, Jarak Tangan 10 Inchi:

$$\frac{20 - 10}{20 - 12.36} = \frac{89.4948 - 90}{89.4948 - x}$$

$$10(89.4948 - x) = 7.64(-0.5052)$$

$$894.948 - 10x = -3.8597$$

$$-10x = -3.8597 - 894.948$$

$$x = \frac{898.8077}{10} = 89.8808\%$$

Untuk Berat 42 lb:

$$\frac{10 - 7}{10 - 7.64} = \frac{89.1806 - 90}{89.1806 - x}$$

$$3(89.1806 - x) = 2.36(-0.8194)$$

$$267.5418 - 3x = -1.9338$$

$$-3x = -1.9338 - 267.5418$$

$$x = \frac{269.4756}{3} = 89.8252\%$$

Untuk Berat 39 lb:

$$\frac{10 - 7}{10 - 7.64} = \frac{89.8808 - 90}{89.8808 - x}$$

$$3(89.8808 - x) = 2.36(-0.1192)$$

$$269.6424 - 3x = -0.2813$$

$$-3x = -0.2813 - 269.6424$$

$$x = \frac{269.9237}{3} = 89.9746\%$$

Interpolasi Akhir:

$$\frac{42 - 39}{42 - 41.63} = \frac{89.8252 - 89.9746}{89.8252 - x}$$

$$3(89.8252 - x) = 0.37(-0.1494)$$

$$269.4756 - 3x = -0.0553$$

$$-3x = -0.0553 - 269.4756$$

$$x = \frac{269.5309}{3} = 89.8436\%$$

31. Untuk Gerakan Mengangkat (*Lifting*) Kardus Berisi Produk Hasil Press dari Lantai:

TABLE 2M - MALE POPULATION PERCENTAGES FOR LIFTING TASKS
ENDING BETWEEN KNUCKLE AND SHOULDER HEIGHT ($\geq 31"$ AND $\leq 57"$)

OBJECT WEIGHT (POUNDS)	LIFTING DISTANCE (INCHES)	HAND DISTANCE		7 INCHES					10 INCHES					15 INCHES				
		FREQUENCY		15s	30s	1m	5m	8h	15s	30s	1m	5m	8h	15s	30s	1m	5m	8h
		ONE LIFT EVERY																
96	30	-	-	-	-	12	-	-	-	-	-	-	-	-	-	-	-	
	20	-	-	-	-	25	-	-	-	-	12	-	-	-	-	-	-	
	10	-	-	16	21	46	-	-	-	-	30	-	-	-	-	-	-	
92	30	-	-	-	-	16	-	-	-	-	-	-	-	-	-	-	-	
	20	-	-	-	-	30	-	-	-	-	16	-	-	-	-	-	-	
	10	-	-	20	26	52	-	-	-	13	36	-	-	-	-	-	-	
88	30	-	-	-	-	21	-	-	-	-	-	-	-	-	-	-	-	
	20	-	-	-	13	36	-	-	-	-	21	-	-	-	-	-	-	
	10	-	11	25	32	57	-	-	12	17	42	-	-	-	-	-	13	
84	30	-	-	-	-	27	-	-	-	-	13	-	-	-	-	-	-	
	20	-	-	12	17	42	-	-	-	-	26	-	-	-	-	-	-	
	10	-	15	31	38	63	-	-	17	22	48	-	-	-	-	-	17	
80	30	-	-	-	11	33	-	-	-	-	18	-	-	-	-	-	-	
	20	-	-	17	23	49	-	-	-	11	32	-	-	-	-	-	-	
	10	12	20	38	44	68	-	-	22	28	54	-	-	-	-	-	23	
76	30	-	-	11	16	40	-	-	-	-	24	-	-	-	-	-	-	
	20	-	-	23	29	55	-	-	11	15	39	-	-	-	-	-	11	
	10	17	26	45	51	72	-	13	29	35	60	-	-	-	-	-	29	
72	30	-	-	16	21	47	-	-	-	-	31	-	-	-	-	-	-	
	20	-	14	30	36	61	-	-	16	21	47	-	-	-	-	-	16	
	10	23	33	52	58	77	11	19	36	42	66	-	-	-	-	13	36	
68	30	-	11	22	28	54	-	-	-	15	39	-	-	-	-	-	11	
	20	12	20	37	44	67	-	-	22	28	54	-	-	-	-	-	23	
	10	30	41	59	64	81	16	25	43	50	72	-	-	14	19	44	-	
64	30	12	17	30	36	61	-	-	16	21	47	-	-	-	-	-	16	
	20	18	27	45	52	73	-	-	14	29	56	61	-	-	-	-	30	
	10	38	49	65	70	84	23	33	51	57	77	-	-	20	26	52	-	
60	30	18	25	38	45	68	-	12	23	29	55	-	-	-	-	-	24	
	20	25	35	54	60	78	13	20	38	44	68	-	-	-	-	15	39	
	10	47	57	72	76	87	31	42	59	64	81	-	13	28	34	60	-	
56	30	26	33	48	54	74	13	19	32	38	53	-	-	-	-	-	32	
	20	34	45	62	67	83	20	29	47	53	74	-	-	-	17	22	48	
	10	56	65	77	81	+	41	51	67	71	85	13	20	37	44	67	-	
52	30	36	43	57	63	80	21	28	41	48	70	-	-	13	17	42	-	
	20	44	54	69	74	86	28	39	56	62	80	-	11	25	31	57	-	
	10	64	72	82	85	+	50	60	73	77	88	20	29	47	53	74	-	
48	30	46	54	66	71	85	31	38	52	58	77	-	11	21	27	53	-	
	20	54	63	76	80	+	39	49	65	70	84	12	19	36	42	66	-	
	10	72	78	86	88	+	60	68	80	83	+	30	40	57	63	80	-	
44	30	57	64	74	78	88	42	50	62	67	83	14	19	32	38	63	-	
	20	64	72	82	85	+	51	60	74	77	88	20	29	47	53	74	-	
	10	79	84	+	+	+	69	76	85	87	+	42	51	67	71	85	-	
40	30	68	73	81	84	+	55	61	72	76	87	24	31	44	51	72	-	
	20	73	79	87	89	+	62	70	81	84	+	32	42	59	64	81	-	
	10	85	88	+	+	+	77	82	89	+	+	54	63	75	79	89	-	
36	30	77	81	87	89	+	66	72	80	83	+	38	45	58	63	80	-	
	20	81	85	+	+	+	72	78	86	88	+	46	56	70	74	87	-	
	10	89	+	+	+	+	84	88	+	+	+	65	73	82	85	+	-	
32	30	84	87	+	+	+	77	81	86	88	+	53	60	70	74	87	-	
	20	87	+	+	+	+	81	85	+	+	+	61	69	79	83	+	-	
	10	+	+	+	+	+	89	+	+	+	+	76	82	88	+	+	-	
28	30	+	+	+	+	+	85	88	+	+	+	68	73	81	84	+	-	
	20	+	+	+	+	+	88	+	+	+	+	74	79	87	89	+	-	
	10	+	+	+	+	+	+	+	+	+	+	85	88	+	+	+	-	

+ = GREATER THAN 90% - = LESS THAN 10%

Didapatkan Jarak Tangan: 7.83 inchi (yang terletak diantara 7 inchi dan 10 inchi), Berat Benda: 56.83 pound (terletak diantara 56 pound dan 60 pound), Frekuensi Pengangkatannya: 8 jam sekali, dan Jarak Pengangkatannya: 19.61 inchi (Terletak diantara 10 inchi dan 20 inchi). Berikut ini merupakan hasil interpolasinya:

Untuk berat 56 lb, Jarak Tangan: 7 Inchi:

$$\frac{20 - 10}{20 - 19.61} = \frac{83 - 90}{83 - x}$$

$$10(83 - x) = 0.39(-7)$$

$$830 - 10x = -2.73$$

$$-10x = -2.73 - 830$$

$$x = \frac{832.73}{10} = 83.273\%$$

Untuk berat 56 lb, Jarak Tangan: 10 Inchi:

$$\frac{20 - 10}{20 - 19.61} = \frac{74 - 85}{74 - x}$$

$$10(74 - x) = 0.39(-11)$$

$$740 - 10x = -4.29$$

$$-10x = -4.29 - 740$$

$$x = \frac{744.29}{10} = 74.429\%$$

Untuk berat 60 lb, Jarak Tangan: 7 Inchi:

$$\frac{20 - 10}{20 - 19.61} = \frac{78 - 87}{78 - x}$$

$$10(78 - x) = 0.39(-11)$$

$$780 - 10x = -4.29$$

$$-10x = -4.29 - 780$$

$$x = \frac{784.29}{10} = 78.429\%$$

Untuk berat 60 lb, Jarak Tangan: 10 Inchi:

$$\frac{20 - 10}{20 - 19.61} = \frac{68 - 81}{68 - x}$$

$$10(68 - x) = 0.39(-13)$$

$$680 - 10x = -5.07$$

$$-10x = -5.07 - 680$$

$$x = \frac{685.07}{10} = 68.507\%$$

Untuk Berat 56 lb:

$$\frac{10 - 7}{10 - 7.83} = \frac{74.429 - 83.273}{74.429 - x}$$

$$3(74.429 - x) = 2.17(-8.844)$$

$$223.287 - 3x = -19.1915$$

$$-3x = -19.1915 - 223.287$$

$$x = \frac{242.4785}{3} = 80.8262\%$$

Untuk Berat 60 lb:

$$\frac{10 - 7}{10 - 7.83} = \frac{68.507 - 78.429}{68.507 - x}$$

$$3(68.507 - x) = 2.17(-9.922)$$

$$205.521 - 3x = -21.5307$$

$$-3x = -21.5307 - 205.521$$

$$x = \frac{227.0517}{3} = 75.6839\%$$

Interpolasi Akhir:

$$\frac{60 - 56}{60 - 56.83} = \frac{75.6839 - 80.8262}{75.6839 - x}$$

$$4(75.6839 - x) = 3.17(-5.1423)$$

$$302.7356 - 4x = -16.2011$$

$$-4x = -16.2011 - 302.7356$$

$$x = \frac{318.9367}{4} = 79.7342\%$$

32. Untuk Gerakan Mendorong (*Pushing*) Gerobak Pengangkut dari Stasiun Press menuju Stasiun Cat Semprot:

**TABLE 8M - MALE POPULATION PERCENTAGES FOR PUSHING TASKS
SUSTAINED FORCE**

PUSHING DISTANCE		7 FEET					25 FEET					50 FEET					
		30s	1m	5m	30m	8h	30s	1m	5m	30m	8h	30s	1m	5m	30m	8h	
SUSTAINED PUSHING FORCE (POUNDS)	105	57	-	-	-	23	-	-	-	-	-	-	-	-	-	-	-
		37	-	-	-	11	28	-	-	-	-	-	-	-	-	-	-
		25	-	-	-	-	27	-	-	-	-	-	-	-	-	-	-
	100	57	-	-	-	12	29	-	-	-	-	11	-	-	-	-	-
		37	-	-	-	12	34	-	-	-	-	-	-	-	-	-	-
		25	-	-	-	11	32	-	-	-	-	-	-	-	-	-	-
	95	57	-	-	-	13	35	-	-	-	-	16	-	-	-	-	-
		37	-	-	-	17	40	-	-	-	-	14	-	-	-	-	-
		25	-	-	-	16	39	-	-	-	-	11	-	-	-	-	-
	90	57	-	-	-	18	42	-	-	-	-	21	-	-	-	-	-
		37	-	-	-	22	47	-	-	-	-	20	-	-	-	-	-
		25	-	-	-	21	45	-	-	-	-	16	-	-	-	-	-
	85	57	-	-	-	24	49	-	-	-	11	27	-	-	-	-	-
		37	-	-	-	13	29	33	53	-	-	26	-	-	-	-	-
		25	-	-	-	12	28	32	52	-	-	22	-	-	-	-	-
	80	57	-	-	-	14	31	36	56	-	-	13	16	35	-	-	13
		37	-	-	-	18	36	41	60	-	-	12	15	33	-	-	12
		25	-	-	-	17	35	39	59	-	-	12	29	-	-	-	-
	75	57	-	-	-	21	39	44	63	-	-	19	23	43	-	-	19
		37	13	25	44	49	67	-	-	-	18	21	41	-	-	-	18
		25	12	24	43	47	66	-	-	-	14	17	37	-	-	-	14
	70	57	16	29	48	52	69	-	-	11	27	31	51	-	-	12	15
		37	20	33	53	57	72	-	-	-	25	29	50	-	-	12	14
		25	19	32	52	56	72	-	-	-	21	25	45	-	-	-	11
65	57	23	38	57	60	75	-	-	18	36	40	60	-	-	19	23	
	37	28	43	61	64	78	-	-	16	34	38	58	-	-	18	22	
	25	27	42	60	63	77	-	-	13	29	34	54	-	-	14	19	
60	57	33	48	65	68	80	-	-	26	46	50	67	-	-	12	28	
	37	38	52	69	71	82	-	-	25	44	48	66	-	-	11	27	
	25	37	51	68	71	82	-	-	21	39	44	63	-	-	23	26	
55	57	44	59	72	75	85	11	37	56	60	75	-	-	20	39	43	
	37	49	62	76	78	86	14	36	55	58	74	-	-	19	38	42	
	25	47	61	75	77	86	13	31	50	54	71	-	-	15	33	37	
50	57	55	67	79	81	88	20	49	66	69	81	-	-	32	51	55	
	37	59	71	82	83	89	23	47	65	68	80	-	-	30	50	53	
	25	58	70	81	83	89	23	43	61	64	78	-	-	25	45	49	
45	57	66	76	85	86	89	32	61	75	77	86	15	45	62	66	71	
	37	70	78	86	88	89	36	59	74	76	85	19	43	61	65	70	
	25	69	78	86	87	89	35	55	71	73	84	20	38	57	61	67	
40	57	76	83	89	89	89	47	72	82	84	88	28	58	73	76	79	
	37	78	85	89	89	89	50	71	81	83	87	33	57	72	75	78	
	25	78	84	89	89	89	50	67	79	81	88	34	53	69	72	75	
35	57	84	88	89	89	89	62	81	88	89	89	44	71	82	83	85	
	37	85	89	89	89	89	65	80	87	89	89	49	70	81	83	85	
	25	85	89	89	89	89	65	78	86	87	87	50	67	79	81	83	
30	57	89	89	89	89	89	75	88	89	89	89	62	82	88	89	89	
	37	89	89	89	89	89	77	87	89	89	89	66	81	88	89	89	
	25	89	89	89	89	89	77	86	89	89	89	67	79	87	88	88	
25	57	89	89	89	89	89	86	89	89	89	89	77	89	89	89	89	
	37	89	89	89	89	89	87	89	89	89	89	80	89	89	89	89	
	25	89	89	89	89	89	87	89	89	89	89	80	88	89	89	89	
20	57	89	89	89	89	89	89	89	89	89	89	88	89	89	89	89	
	37	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	
	25	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	

>50

+ = GREATER THAN 90% - = LESS THAN 10%

Didapatkan Ketinggian Tangannya saat memulai adalah 44.29 inchi, Jarak Mendorongnya adalah 83.66 Feet, dan Gaya Berkelanjutan yang digunakan untuk Mendorong beban yang ada adalah 58.81 pound. Jika dilihat dari tabel, jarak maksimum yang dihitung pada tabel adalah 50 Feet, karena jarak yang ada antara Stasiun Press dan Stasiun Cat Semprot adalah 83.66 Feet maka hasilnya melebihi batas yang dianjurkan sehingga dianggap nilai presentase populasi yang diperbolehkan melakukan aktivitas tersebut adalah kurang dari 10%.

33. Untuk Gerakan Menurunkan (*Lowering*) Kardus Berisi Produk Hasil Stasiun Press dari Gerobak Pengangkut menuju Lantai Cat Semprot:

**TABLE 4M - MALE POPULATION PERCENTAGES FOR LOWERING TASKS
BEGINNING BELOW KNUCKLE HEIGHT (<31")**

HAND DISTANCE		7 INCHES					10 INCHES					15 INCHES							
FREQUENCY ONE LOWER EVERY		15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h			
OBJECT WEIGHT (POUNDS)	LOWERING DISTANCE (INCHES)	87	30	-	-	23	47	73	-	-	11	31	62	-	-	-	-	33	
		20	-	14	28	51	76	-	-	14	36	66	-	-	-	-	-	38	
		10	21	28	42	64	83	-	14	26	50	75	-	-	-	-	20	52	
		84	30	-	13	27	51	75	-	-	14	35	65	-	-	-	-	37	
		20	-	17	32	55	78	-	-	17	40	69	-	-	-	-	12	42	
		10	24	32	46	67	84	11	17	30	54	77	-	-	-	-	24	55	
		81	30	-	16	31	55	78	-	-	17	40	69	-	-	-	-	12	41
		20	13	20	36	59	80	-	-	21	44	72	-	-	-	-	15	46	
		10	29	36	50	70	86	14	20	35	58	80	-	-	-	-	28	59	
		78	30	13	20	35	58	80	-	-	21	44	71	-	-	-	-	15	46
		20	16	24	40	62	82	-	-	11	25	49	74	-	-	-	-	19	50
		10	33	40	54	72	87	17	24	39	61	81	-	-	-	11	32	63	
		75	30	16	24	40	62	82	-	-	11	25	49	74	-	-	-	19	50
		20	20	28	45	66	84	-	-	14	29	53	77	-	-	-	-	23	54
		10	37	45	58	75	88	21	29	44	65	83	-	-	-	15	36	66	
		72	30	20	28	45	66	84	-	-	14	29	53	77	-	-	-	23	54
		20	24	33	49	69	85	11	18	34	57	79	-	-	-	-	27	59	
		10	42	50	62	78	89	25	33	48	68	85	-	-	-	18	41	70	
		69	30	24	33	50	69	85	11	18	34	57	79	-	-	-	-	27	59
		20	29	38	54	72	87	14	22	39	61	81	-	-	-	11	32	63	
		10	47	54	66	80	+	30	38	53	72	87	-	-	-	23	46	73	
		66	30	29	38	54	73	87	15	23	39	62	82	-	-	-	12	32	63
		20	34	43	59	76	88	18	27	44	66	84	-	-	-	15	37	67	
		10	52	59	69	82	+	35	44	58	75	88	-	-	-	13	27	51	76
		63	30	35	44	59	76	89	19	28	45	66	84	-	-	-	15	38	67
		20	40	49	63	78	+	23	32	49	69	85	-	-	-	19	43	70	
		10	57	63	73	84	+	41	49	62	78	89	-	-	-	17	33	56	79
		60	30	40	49	64	79	+	24	33	50	70	86	-	-	-	20	43	71
20	45	54	67	81	+	28	38	55	73	87	-	-	-	24	48	74			
10	62	67	76	86	+	46	54	66	80	+	14	21	38	61	81				
57	30	46	55	68	82	+	29	39	56	74	88	-	-	-	26	49	75		
20	51	59	71	83	+	34	44	60	76	89	-	-	-	13	30	54	77		
10	66	72	79	88	+	52	59	71	83	+	18	27	44	66	84				
54	30	52	60	72	84	+	36	45	61	77	89	-	-	-	14	32	55	78	
20	57	64	75	86	+	40	50	65	80	+	-	-	-	18	36	59	80		
10	71	75	82	+	+	58	64	74	85	+	24	33	50	70	86				
51	30	58	66	76	86	+	42	52	66	80	+	11	19	38	61	81			
20	62	69	79	88	+	47	56	70	82	+	14	23	43	65	83				
10	75	79	85	+	+	63	69	78	87	+	30	40	56	74	88				
48	30	64	71	80	88	+	49	58	71	83	+	16	26	45	66	84			
20	68	74	82	89	+	54	62	74	85	+	20	30	50	70	86				
10	78	82	87	+	+	68	74	81	89	+	37	47	62	78	+				
45	30	70	75	83	+	+	56	64	76	86	+	22	33	52	71	86			
20	73	78	85	+	+	60	68	78	87	+	26	38	57	74	88				
10	82	85	89	+	+	73	78	84	+	+	44	54	68	81	+				
42	30	75	79	86	+	+	63	70	80	88	+	30	41	60	76	89			
20	77	81	87	+	+	67	73	82	89	+	34	46	63	79	+				
10	85	87	+	+	+	78	82	87	+	+	52	61	73	85	+				
39	30	79	83	88	+	+	69	75	83	+	+	38	49	66	80	+			
20	81	85	89	+	+	72	78	85	+	+	43	54	70	82	+				
10	88	+	+	+	+	82	85	89	+	+	60	67	78	87	+				
36	30	83	+	+	+	+	75	80	87	+	+	47	58	73	84	+			
20	85	+	+	+	+	+	78	82	88	+	+	52	62	75	86	+			
10	+	+	+	+	+	+	85	88	+	+	+	67	74	82	+	+			

+ = GREATER THAN 90% - = LESS THAN 10%

Didapatkan Jarak Tangan: 7.4 inchi (yang terletak diantara 7 inchi dan 10 inchi), Berat Benda: 56.83 pound (terletak diantara 57 pound dan 60 pound), Frekuensi Pengangkatannya: 8 jam sekali, dan Jarak Penurunannya: 15.24 inchi (Terletak diantara 10 inchi dan 20 inchi). Berikut ini merupakan hasil interpolasinya:

Untuk Berat 60 lb, Jarak Tangan 7 Inchi: 90%

Untuk Berat 60 lb, Jarak Tangan 10 Inchi:

$$\frac{20 - 10}{20 - 15.24} = \frac{87 - 90}{87 - x}$$

$$10(87 - x) = 4.76(-3)$$

$$870 - 10x = -14.28$$

$$-10x = -14.28 - 870$$

$$x = \frac{884.28}{10} = 88.428\%$$

Untuk Berat 57 lb, Jarak Tangan 7 Inchi: 90%

Untuk Berat 57 lb, Jarak Tangan 10 Inchi:

$$\frac{20 - 10}{20 - 15.24} = \frac{89 - 90}{89 - x}$$

$$10(89 - x) = 4.76(-1)$$

$$890 - 10x = -4.76$$

$$-10x = -4.76 - 890$$

$$x = \frac{894.76}{10} = 89.476\%$$

Untuk Berat 60 lb:

$$\frac{10 - 7}{10 - 7.4} = \frac{88.428 - 90}{88.428 - x}$$

$$3(88.428 - x) = 2.6(-1.572)$$

$$265.284 - 3x = -4.0872$$

$$-3x = -4.0872 - 265.284$$

$$x = \frac{269.3712}{3} = 89.7904\%$$

Untuk Berat 57 lb:

$$\frac{10 - 7}{10 - 7.4} = \frac{89.476 - 90}{89.476 - x}$$

$$3(89.476 - x) = 2.6(-0.524)$$

$$268.428 - 3x = -1.3624$$

$$-3x = -1.3624 - 268.428$$

$$x = \frac{269.7904}{3} = 89.9301\%$$

Interpolasi Akhir:

$$\frac{60 - 57}{60 - 56.83} = \frac{89.7904 - 89.9301}{89.7904 - x}$$

$$3(89.7904 - x) = 3.17(-0.1397)$$

$$269.3712 - 3x = -0.4428$$

$$-3x = -0.4428 - 269.3712$$

$$x = \frac{269.814}{3} = 89.938\%$$

HASIL HITUNGAN INTERPOLASI BERAT BEBAN MAKSIMUM YANG DIPERBOLEHKAN MENURUT SNOOK TABLE:

1. Untuk Gerakan Menurunkan (*Lowering*) Kayu dari Lemari menuju Gerobak Pengangkut:

Maximum Acceptable Weight of Lower for Males (kg)

Width Distance Percent	Floor level to knuckle height One lift every										Knuckle height to shoulder height One lift every										Shoulder height to arm reach One lift every									
	5	9	14	1	2	5	30	8	5	9	14	1	2	5	30	8	5	9	14	1	2	5	30	8						
	s	s	s	min	min	min	h	s	s	s	min	min	min	h	s	s	s	min	min	min	h									
90	7	9	10	12	14	15	16	20	10	11	14	14	15	15	16	19	6	7	9	9	10	10	11	13						
75	10	13	14	18	20	22	22	29	13	16	18	18	21	21	21	26	9	10	12	12	14	14	14	18						
25	17	21	24	29	33	36	37	47	21	25	29	29	34	34	34	42	14	16	19	20	23	23	23	28						
10	20	25	28	34	39	42	44	56	25	29	34	34	39	39	39	49	15	19	22	23	26	26	27	33						
90	8	10	11	13	15	16	17	21	11	12	14	15	17	17	18	22	7	8	9	10	12	12	12	15						
75	11	14	15	18	21	23	23	30	14	17	20	21	24	24	24	30	9	11	13	14	16	16	16	20						
25	14	18	20	24	28	30	31	40	19	21	25	27	31	31	31	38	12	14	16	18	21	21	21	26						
10	18	22	25	30	34	37	39	49	23	26	31	33	38	38	38	47	15	17	20	22	25	25	26	32						
90	21	26	29	36	41	44	46	58	27	31	36	38	44	44	44	55	17	20	24	26	30	30	30	37						
75	9	11	12	15	17	18	19	24	12	14	17	18	21	21	21	26	8	9	11	12	14	14	14	17						
25	13	16	17	21	24	25	26	34	17	20	23	24	28	28	28	35	11	13	15	16	19	19	19	24						
10	17	21	23	27	31	34	35	45	22	25	30	32	36	36	37	45	14	16	19	21	24	24	25	31						
90	8	10	11	15	17	18	19	24	10	11	14	14	15	15	16	19	7	8	10	11	12	12	12	15						
75	12	15	16	21	24	26	26	34	13	16	18	18	21	21	21	26	10	11	14	15	17	17	17	21						
25	16	19	21	29	31	34	35	45	18	20	24	24	27	27	28	34	13	15	17	19	22	22	22	27						
10	19	24	26	34	39	42	44	56	21	25	29	29	34	34	34	42	16	18	21	23	27	27	27	33						
90	9	11	12	15	17	19	19	25	11	12	14	15	17	17	18	22	8	9	10	12	14	14	14	17						
75	12	15	17	22	25	26	28	35	14	17	20	21	24	24	24	30	10	12	14	16	19	19	19	24						
25	16	20	22	29	33	35	37	47	19	21	25	27	31	31	31	38	14	16	18	21	24	24	25	31						
10	20	25	27	36	41	44	46	58	23	26	31	33	38	38	38	47	17	19	23	26	30	30	30	37						
90	10	13	14	17	20	21	22	28	12	14	17	18	21	21	21	26	9	10	12	14	16	16	16	20						
75	14	18	19	24	28	30	31	40	17	20	23	24	28	28	28	35	12	14	17	19	22	22	22	28						
25	19	24	26	32	37	40	41	54	22	25	30	32	36	36	37	45	16	18	22	25	29	29	29	36						
10	23	29	32	40	46	49	51	65	27	31	37	39	44	44	45	56	20	23	27	31	35	35	36	44						
90	10	12	13	17	19	21	21	27	11	12	14	15	17	17	18	22	9	10	12	12	14	14	14	18						
75	14	17	19	24	27	29	30	39	14	17	20	21	24	24	24	30	12	13	16	17	19	19	19	24						
25	18	23	25	32	36	39	40	51	19	21	25	27	31	31	31	38	15	17	21	22	25	25	25	31						
10	23	29	31	39	45	48	50	64	23	26	31	33	38	38	38	47	19	21	25	27	31	31	31	38						
90	10	13	14	17	20	22	22	29	11	13	15	17	20	20	20	24	9	10	12	14	16	16	16	20						
75	14	18	20	25	28	30	32	40	15	18	21	23	27	27	27	33	12	14	17	19	22	22	22	27						
25	19	24	26	33	37	40	42	53	20	23	27	30	35	35	35	43	16	19	22	24	28	28	28	35						
10	24	30	33	41	47	50	52	69	24	29	33	37	42	42	43	53	20	23	29	30	34	34	35	43						
90	12	15	16	20	23	24	25	32	13	15	18	20	23	23	23	29	11	12	15	16	19	19	19	23						
75	17	21	23	28	32	34	36	46	18	21	25	27	31	31	32	39	15	17	20	22	26	26	26	32						
25	23	28	31	37	42	46	47	60	23	27	32	35	41	41	41	51	19	22	26	29	33	33	33	41						
10	28	35	38	46	53	57	59	78	29	33	39	43	50	50	50	63	23	27	32	35	41	41	41	51						
90	12	15	16	20	23	24	25	32	13	15	18	20	23	23	23	29	11	12	15	16	19	19	19	23						
75	17	21	23	28	32	34	36	46	18	21	25	27	31	31	32	39	15	17	20	22	26	26	26	32						
25	23	28	31	37	42	46	47	60	23	27	32	35	41	41	41	51	19	22	26	29	33	33	33	41						
10	28	35	38	46	53	57	59	78	29	33	39	43	50	50	50	63	23	27	32	35	41	41	41	51						
90	12	15	16	20	23	24	25	32	13	15	18	20	23	23	23	29	11	12	15	16	19	19	19	23						
75	17	21	23	28	32	34	36	46	18	21	25	27	31	31	32	39	15	17	20	22	26	26	26	32						
25	23	28	31	37	42	46	47	60	23	27	32	35	41	41	41	51	19	22	26	29	33	33	33	41						
10	28	35	38	46	53	57	59	78	29	33	39	43	50	50	50	63	23	27	32	35	41	41	41	51						
90	12	15	16	20	23	24	25	32	13	15	18	20	23	23	23	29	11	12	15	16	19	19	19	23						
75	17	21	23	28	32	34	36	46	18	21	25	27	31	31	32	39	15	17	20	22	26	26	26	32						
25	23	28	31	37	42	46	47	60	23	27	32	35	41	41	41	51	19	22	26	29	33	33	33	41						
10	28	35	38	46	53	57	59	78	29	33	39	43	50	50	50	63	23	27	32	35	41	41	41	51						
90	12	15	16	20	23	24	25	32	13	15	18	20	23	23	23	29	11	12	15	16	19	19	19	23						
75	17	21	23	28	32	34	36	46	18	21	25	27	31	31	32	39	15	17	20	22	26	26	26	32						
25	23	28	31	37	42	46	47	60	23	27	32	35	41	41	41	51	19	22	26	29	33	33	33	41						
10	28	35	38	46	53	57	59	78	29	33	39	43	50	50	50	63	23	27	32	35	41	41	41	51						
90	12	15	16	20	23	24	25	32	13	15	18	20	23	23	23	29	11	12	15	16	19	19	19	23						
75	17	21	23	28	32	34	36	46	18	21	25	27	31	31	32	39	15	17	20	22	26	26	26	32						
25	23	28	31	37	42	46	47	60	23	27	32	35	41	41	41	51	19	22	26	29	33	33	33	41						
10	28	35	38	46	53	57	59	78	29	33	39	43	50	50	50	63	23	27	32	35	41	41	41	51						
90	12	15	16	20	23	24	25	32	13	15	18	20	23	23	23	29	11	12	15	16	19	19	19	23						
75	17	21	23	28	32	34	36	46	18	21	25	27	31	31	32	39	15	17	20	22	26	26	26	32						
25	23	28	31	37	42	46	47	60	23	27	32	35	41	41	41	51	19	22	26	29	33	33	33	41						
10	28	35	38	46	53	57	59	78	29	33	39	43	50	50	50	63	23	27	32	35	41	41	41	51						

Note:
1. Width is dimension away from body in cm

2. Distance is vertical lift in cm

3. Percent pertains to industrial population

4. Italicized values exceed 8 hr physiological criteria

Snook, S. H. and Ciriello, V. M., The design of manual handling tasks: revised tables of maximum acceptable weights and forces, *Ergonomics*, 34, 9, 1991

Didapatkan Lebar: 34 cm. Jarak: 52.8 cm (terletak antara 76 cm dan 51 cm), Frekuensi Pengangkatannya: 8 jam sekali, dan Persentase populasi yang dapat melakukan pekerjaan tersebut tanpa mengalami kelelahan yang berarti sebesar 66.1941% (Terletak antara 50% dan 75%). Berikut ini merupakan hasil interpolasinya:

Untuk Jarak 76 cm:

$$\frac{75 - 50}{75 - 66.1941} = \frac{24 - 31}{24 - x}$$

$$25(24 - x) = 8.8059(-7)$$

$$600 - 25x = -61.6413$$

$$-25x = -61.6413 - 600$$

$$x = \frac{661.6413}{25} = 26.4657 \text{ kg}$$

Untuk Jarak 76 cm:

$$\frac{75 - 50}{75 - 66.1941} = \frac{27 - 35}{27 - x}$$

$$25(27 - x) = 8.8059(-8)$$

$$675 - 25x = -68.0472$$

$$-25x = -68.0472 - 675$$

$$x = \frac{743.0472}{25} = 29.7219 \text{ kg}$$

Interpolasi Akhir:

$$\frac{76 - 51}{76 - 52.8} = \frac{26.4657 - 29.7219}{26.4657 - x}$$

$$25(26.4657 - x) = 23.2(-3.2562)$$

$$661.6425 - 25x = -75.5438$$

$$-25x = -75.5438 - 661.6425$$

$$x = \frac{736.9863}{25} = 29.4795 \text{ kg}$$

2. Untuk Gerakan Mengangkat (*Lifting*) Kardus Hasil Stasiun Gergaji Besar ke Gerobak Pengangkut:

Maximum Acceptable Weight of Lift for Males (kg)

Width Distance Percent	Floor level to knuckle height One lift every							Knuckle height to shoulder height One lift every							Shoulder height to arm reach One lift every								
	5	9	14	1	2	5	30	8	5	9	14	1	2	5	30	8	5	9	14	1	2	5	30
	s	s	s	min	min	min	h	s	s	s	min	min	min	h	s	s	s	min	min	min	h		
90	6	7	9	11	13	14	17	8	10	12	13	14	14	16	17	6	8	9	10	10	11	12	13
75	9	11	13	16	19	20	24	10	14	16	18	18	19	21	23	8	10	12	14	14	14	16	17
51	12	15	17	22	25	27	32	13	17	20	22	23	24	26	29	10	13	15	17	17	18	20	22
25	15	18	21	28	31	34	41	16	21	24	27	27	28	32	35	11	16	18	21	21	22	24	27
10	18	22	25	33	37	40	48	19	24	28	31	32	33	37	40	14	18	21	24	24	25	28	31
90	6	8	9	12	13	15	17	8	11	13	15	15	16	18	19	6	8	9	12	12	12	14	15
75	9	11	13	17	19	21	25	11	15	17	20	20	21	23	25	8	11	12	15	15	16	18	20
51	13	15	18	23	26	29	34	14	19	21	25	25	26	29	32	10	14	16	19	20	20	23	25
25	16	19	22	29	33	35	42	17	23	26	30	31	32	36	39	13	17	19	23	24	25	27	30
10	19	22	26	34	38	42	50	20	26	30	35	36	37	41	45	16	19	22	27	27	29	32	35
90	8	9	11	13	15	16	20	10	13	15	18	18	19	21	23	7	10	11	14	14	14	16	18
75	11	13	15	19	22	24	28	13	17	20	23	24	25	27	30	10	13	15	18	18	19	21	23
51	15	18	21	26	29	32	38	17	22	25	30	30	31	35	38	12	16	19	23	23	24	27	29
25	18	22	26	33	37	40	48	20	27	30	36	36	38	42	46	15	20	22	28	28	29	32	35
10	22	26	31	38	44	47	57	23	31	35	42	42	44	49	53	17	23	26	32	32	34	38	41
90	7	8	10	13	15	16	20	8	10	12	13	14	14	16	17	7	9	10	12	12	13	14	16
75	10	12	14	19	22	24	28	10	14	16	18	18	19	21	23	9	11	13	16	16	17	19	21
51	14	16	19	26	29	32	38	13	17	20	22	23	24	26	29	11	15	17	20	21	21	24	26
25	17	20	24	33	37	40	48	16	21	24	27	27	28	32	35	13	18	20	25	25	26	29	31
10	20	24	28	38	43	47	57	19	24	28	31	32	33	37	40	16	21	23	28	29	30	33	36
90	7	9	10	14	16	17	20	8	11	13	15	15	16	18	19	7	9	11	14	14	14	16	18
75	10	13	15	20	23	25	30	11	15	17	20	20	21	23	25	9	12	14	18	18	19	21	23
51	14	17	20	27	30	33	40	14	19	21	25	25	26	29	32	12	16	19	23	23	24	27	29
25	18	21	25	34	38	42	50	17	23	26	30	31	32	36	39	14	19	21	28	28	29	32	35
10	21	25	29	40	45	49	59	20	26	30	35	35	37	41	45	16	22	25	32	32	34	37	41
90	8	10	12	16	18	19	23	10	13	15	18	18	19	21	23	9	11	12	16	16	17	19	21
75	12	15	17	23	26	28	29	13	17	20	23	24	25	27	30	11	14	16	21	21	22	25	27
51	16	20	23	30	34	37	45	17	22	25	30	30	31	35	38	14	18	21	27	27	28	32	35
25	21	25	29	38	43	47	56	20	27	30	36	36	38	42	46	16	22	25	33	33	34	38	42
10	24	29	34	45	51	56	67	23	31	35	42	42	44	49	53	19	25	29	38	38	40	44	48
90	8	10	11	15	17	19	23	8	11	13	15	15	16	18	19	8	10	12	14	14	15	16	18
75	12	14	17	22	25	28	33	11	15	17	20	20	21	23	25	10	14	16	18	19	19	24	24
51	16	19	22	30	34	37	44	14	19	21	25	25	26	29	32	13	17	20	23	24	25	27	30
25	20	24	28	37	42	47	55	17	23	26	30	31	32	36	39	16	21	24	28	29	30	33	36
10	24	29	33	44	50	54	65	20	26	30	35	35	37	41	45	18	24	28	33	33	34	38	42
34	9	10	12	16	18	20	24	9	12	14	17	17	18	20	22	8	11	13	16	16	17	18	20
51	12	15	18	23	26	28	34	12	16	18	22	23	23	26	29	11	14	17	21	21	22	24	26
75	17	20	24	31	35	38	46	15	20	23	28	29	30	33	36	14	18	21	26	27	28	31	34
90	21	25	30	39	44	48	57	18	24	27	34	35	36	40	44	17	22	25	32	32	33	37	41
25	25	30	35	45	52	57	68	21	28	32	40	40	42	46	51	19	26	29	37	37	39	43	47
90	10	12	14	18	20	22	27	11	14	16	20	20	21	23	26	10	13	15	19	19	19	22	24
75	15	18	21	26	30	32	38	14	18	21	26	27	28	31	34	13	17	20	24	25	26	29	31
51	20	24	28	35	40	43	44	18	23	27	33	34	35	39	43	16	22	25	31	31	33	36	40
25	26	30	35	44	50	54	65	21	28	32	40	41	42	47	52	20	26	30	37	38	39	44	46
10	29	35	41	52	59	64	76	25	33	37	47	47	49	55	60	23	30	35	43	44	45	51	55

Snook, S. H. and Ciriello, V. M., The design of manual handling tasks: revised tables of maximum acceptable weights and forces, *Ergonomics*, 34, 9, 1991

Didapatkan Lebar: 34 cm. Jarak: 33.7 cm (terletak diantara 51 cm dan 25 cm), Frekuensi Pengangkatannya: 8 jam sekali, dan Persentase populasi yang dapat melakukan pekerjaan tersebut tanpa mengalami kelelahan yang berarti sebesar 88.2509% (Terletak diantara 75% dan 90%). Berikut ini merupakan hasil interpolasinya:

Untuk Jarak 51 cm:

$$\frac{90 - 75}{90 - 88.2509} = \frac{24 - 34}{24 - x}$$

$$15(24 - x) = 1.7491(-10)$$

$$360 - 15x = -17.491$$

$$-15x = -17.491 - 360$$

$$x = \frac{377.491}{15} = 25.166 \text{ kg}$$

Untuk Jarak 25 cm:

$$\frac{90 - 75}{90 - 88.2509} = \frac{27 - 38}{27 - x}$$

$$15(27 - x) = 1.7491(-11)$$

$$405 - 15x = -19.2401$$

$$-15x = -19.2401 - 405$$

$$x = \frac{424.2401}{15} = 28.2827 \text{ kg}$$

Interpolasi Akhir:

$$\frac{51 - 25}{51 - 33.7} = \frac{25.166 - 28.2827}{25.166 - x}$$

$$26(25.166 - x) = 17.3(-3.1167)$$

$$654.316 - 26x = -53.9189$$

$$-26x = -53.9189 - 654.316$$

$$x = \frac{708.2349}{26} = 27.2398 \text{ kg}$$

3. Untuk Gerakan Mengangkat (*Lifting*) Kardus Hasil Stasiun Amplas dari Lantai:

Maximum Acceptable Weight of Lift for Males (kg)

Width Distance Percent	Floor level to knuckle height One lift every								Knuckle height to shoulder height One lift every								Shoulder height to arm reach One lift every										
	s				min				s				min				s				min				h		
90	6	7	9	11	13	14	14	17	8	10	12	13	14	14	16	17	6	8	9	10	10	11	12	13			
75	9	11	13	16	19	20	21	24	10	14	16	18	18	19	21	23	8	10	12	14	14	14	16	17			
50	12	16	17	22	25	27	28	32	13	17	20	22	23	24	26	29	10	13	15	17	17	18	20	22			
25	15	18	21	28	31	34	35	41	16	21	24	27	27	28	32	35	11	15	18	21	21	22	24	27			
10	18	22	25	33	37	40	41	48	19	24	28	31	32	33	37	40	14	18	21	24	24	25	28	31			
90	6	8	9	12	13	15	15	17	8	11	13	15	15	16	18	19	6	8	9	12	12	12	14	15			
75	9	11	13	17	19	21	22	25	11	15	17	20	20	21	23	25	8	11	12	15	15	16	18	20			
50	13	15	18	23	26	29	29	34	14	19	21	25	25	26	29	32	10	14	16	19	20	20	23	25			
25	16	19	22	29	33	35	36	42	17	23	26	30	31	32	36	39	13	17	19	23	24	25	27	30			
10	19	22	26	34	38	42	43	50	20	26	30	35	36	37	41	45	16	19	22	27	27	29	32	35			
90	8	9	11	13	15	15	17	20	10	13	15	18	18	19	21	23	7	10	11	14	14	14	16	18			
75	11	13	15	19	22	24	24	28	13	17	20	23	24	25	27	30	10	13	15	18	18	19	21	23			
50	15	18	21	26	29	32	33	38	17	22	25	30	30	31	35	38	12	16	19	23	23	24	27	29			
25	18	22	26	33	37	40	41	48	20	27	30	35	36	38	42	46	15	20	22	28	28	29	32	35			
10	22	26	31	38	44	47	49	57	23	31	35	42	42	44	49	53	17	23	26	32	32	34	38	41			
90	7	8	10	13	15	16	17	20	8	10	12	13	14	14	16	17	7	9	10	12	12	13	14	16			
75	10	12	14	19	22	24	24	28	10	14	16	18	18	19	21	23	9	11	13	16	16	17	19	21			
50	14	16	19	26	29	32	33	38	13	17	20	22	23	24	26	29	11	15	17	20	21	21	24	26			
25	17	20	24	33	37	40	41	48	16	21	24	27	27	28	32	35	13	18	20	25	25	26	29	31			
10	20	24	28	38	43	47	48	57	19	24	28	31	32	33	37	40	16	21	23	28	29	30	33	36			
90	7	9	10	14	16	17	18	20	8	11	13	15	15	16	18	19	7	9	11	14	14	14	16	18			
75	10	13	15	20	23	25	25	30	11	15	17	20	20	21	23	25	9	12	14	18	18	19	21	23			
50	14	17	20	27	30	33	34	40	14	19	21	25	25	26	29	32	12	15	18	23	23	24	27	29			
25	18	21	25	34	38	42	43	50	17	23	26	30	31	32	36	39	14	19	21	28	28	29	32	35			
10	21	25	29	40	45	49	50	59	20	26	30	35	36	37	41	45	16	22	25	32	32	34	37	41			
90	8	10	12	16	18	19	20	23	10	13	15	18	18	19	21	23	9	11	12	16	16	17	19	21			
75	12	15	17	23	26	28	29	33	13	17	20	23	24	25	27	30	11	14	16	21	21	22	25	27			
50	16	20	23	30	34	37	38	45	17	22	25	30	30	31	35	38	14	18	21	27	27	28	32	35			
25	21	25	29	38	43	47	48	56	20	27	30	36	36	38	42	46	16	22	25	33	33	34	38	42			
10	24	29	34	45	51	56	57	67	23	31	35	42	42	44	49	53	19	25	29	38	38	40	44	48			
90	8	10	11	15	17	19	19	23	8	11	13	15	15	16	18	19	8	10	12	14	14	15	16	18			
75	12	14	17	22	25	28	28	33	11	15	17	20	20	21	23	25	10	14	16	19	19	19	24	24			
50	16	19	22	30	34	37	38	44	14	19	21	25	25	26	29	32	13	17	20	23	24	25	27	30			
25	20	24	28	37	42	47	47	55	17	23	26	30	31	32	36	39	16	21	24	28	29	30	33	36			
10	24	29	33	44	50	54	55	65	20	26	30	35	36	37	41	45	18	24	28	33	33	34	38	42			
90	9	10	12	16	18	20	20	24	9	12	14	17	17	18	20	22	8	11	13	16	16	17	18	20			
75	12	15	18	23	26	29	29	34	12	16	18	22	23	23	26	29	11	14	17	21	21	22	24	26			
50	17	20	24	31	35	38	39	46	15	20	23	28	29	30	33	36	14	18	21	26	27	28	31	34			
25	21	25	30	39	44	48	49	57	18	24	27	34	35	36	40	44	17	22	25	32	32	33	37	41			
10	25	30	35	45	52	57	58	68	21	28	32	40	40	42	46	51	19	26	29	37	37	39	43	47			
90	10	12	14	18	20	22	23	27	11	14	16	20	20	21	23	26	10	13	15	19	19	19	22	24			
75	15	18	21	26	30	32	33	38	14	18	21	26	27	28	31	34	13	17	20	24	25	26	29	31			
50	20	24	28	35	40	43	44	52	18	23	27	33	34	35	39	43	16	22	25	31	31	33	36	40			
25	26	30	35	44	50	54	55	65	21	28	32	40	41	42	47	52	20	26	30	37	38	39	44	46			
10	29	35	41	52	59	64	66	76	25	33	37	47	47	49	55	60	23	30	35	43	44	45	51	55			

Snook, S. H. and Ciriello, V. M., The design of manual handling tasks: revised tables of maximum acceptable weights and forces, *Ergonomics*, 34, 9, 1991

Didapatkan Lebar: 34 cm. Jarak: 55.3 cm (terletak diantara 76 cm dan 51 cm), Frekuensi Pengangkatannya: 4 jam sekali (terletak diantara 8 jam dan 30 menit), dan Persentase populasi yang dapat melakukan pekerjaan tersebut tanpa mengalami kelelahan yang berarti sebesar 88.3372% (Terletak diantara 75% dan 90%). Berikut ini merupakan hasil interpolasinya:

Untuk Jarak 76 cm, persentase 90%:

$$\frac{8 - 0.5}{8 - 4} = \frac{23 - 19}{23 - x}$$

$$7.5(23 - x) = 4(4)$$

$$172.5 - 7.5x = 16$$

$$-7.5x = 16 - 172.5$$

$$x = \frac{156.5}{7.5} = 20.8667 \text{ kg}$$

Untuk Jarak 76 cm, persentase 75%:

$$\frac{8 - 0.5}{8 - 4} = \frac{33 - 28}{33 - x}$$

$$7.5(33 - x) = 4(5)$$

$$247.5 - 7.5x = 20$$

$$-7.5x = 20 - 247.5$$

$$x = \frac{227.5}{7.5} = 30.3333 \text{ kg}$$

Untuk Jarak 51 cm, persentase 90%:

$$\frac{8 - 0.5}{8 - 4} = \frac{24 - 20}{24 - x}$$

$$7.5(24 - x) = 4(4)$$

$$180 - 7.5x = 16$$

$$-7.5x = 16 - 180$$

$$x = \frac{164}{7.5} = 21.8667 \text{ kg}$$

Untuk Jarak 51 cm, persentase 75%:

$$\frac{8 - 0.5}{8 - 4} = \frac{38 - 33}{38 - x}$$

$$7.5(38 - x) = 4(5)$$

$$285 - 7.5x = 20$$

$$-7.5x = 20 - 285$$

$$x = \frac{265}{7.5} = 35.3333 \text{ kg}$$

Untuk Jarak 76 cm:

$$\frac{90 - 75}{90 - 88.3372} = \frac{20.8667 - 30.3333}{20.8667 - x}$$

$$15(20.8667 - x) = 1.6628(-9.4666)$$

$$313.0005 - 15x = -15.7411$$

$$-15x = -15.7411 - 313.0005$$

$$x = \frac{328.7416}{15} = 21.9161 \text{ kg}$$

Untuk Jarak 51 cm:

$$\frac{90 - 75}{90 - 88.3372} = \frac{20.8667 - 35.3333}{20.8667 - x}$$

$$15(20.8667 - x) = 1.6628(-13.4666)$$

$$328.0005 - 15x = -22.3923$$

$$-15x = -22.3923 - 328.0005$$

$$x = \frac{350.3828}{15} = 23.3595 \text{ kg}$$

Interpolasi Akhir:

$$\frac{76 - 51}{76 - 55.3} = \frac{21.9161 - 23.3595}{21.9161 - x}$$

$$25(21.9161 - x) = 20.7(-1.4434)$$

$$547.9025 - 25x = -29.8784$$

$$-25x = -29.8784 - 547.9025$$

$$x = \frac{577.6809}{25} = 23.1112 \text{ kg}$$

4. Untuk Gerakan Mengangkat (*Lifting*) Kardus Berisi Kayu Hasil Gergaji Kecil dan *Drilling* dari Lantai:

Maximum Acceptable Weight of Lift for Males (kg)

Width	Distance	Percent	Floor level to knuckle height One lift every								Knuckle height to shoulder height One lift every								Shoulder height to arm reach One lift every							
			min				h				min				h				min				h			
			5	9	14	1	2	5	30	8	5	9	14	1	2	5	30	8	5	9	14	1	2	5	30	8
	90	75	76	51	25	10	90	75	76	51	25	10	90	75	76	51	25	10	90	75	76	51	25	10		
	6	7	9	11	13	14	14	17	8	10	12	13	14	14	16	17	6	8	9	10	10	11	12	13		
	9	11	13	16	19	20	21	24	10	14	16	18	18	19	21	23	8	10	12	14	14	14	16	17		
	12	15	17	22	25	27	28	32	13	17	20	22	23	24	26	29	10	13	15	17	17	18	20	22		
	15	18	21	28	31	34	35	41	16	21	24	27	27	28	32	35	11	15	18	21	21	22	24	27		
	18	22	25	33	37	40	41	48	19	24	28	31	32	33	37	40	14	18	21	24	24	25	28	31		
	6	8	9	12	13	15	15	17	8	11	13	15	15	16	18	19	6	8	9	12	12	12	14	15		
	9	11	13	17	19	21	22	25	11	15	17	20	20	21	23	25	8	11	12	15	15	16	18	20		
	13	15	18	23	26	29	29	34	14	19	21	25	25	26	29	32	10	14	16	19	20	20	23	25		
	16	19	22	29	33	35	36	42	17	23	25	30	31	32	36	39	13	17	19	23	24	25	27	30		
	19	22	26	34	38	42	43	50	20	26	30	35	36	37	41	45	16	19	22	27	27	29	32	35		
	8	9	11	13	15	16	17	20	10	13	15	18	18	19	21	23	7	10	11	14	14	14	16	18		
	11	13	15	19	22	24	24	28	13	17	20	23	24	25	27	30	10	13	15	18	18	19	21	23		
	15	18	21	26	29	32	33	38	17	22	25	30	30	31	35	38	12	16	19	23	23	24	27	29		
	18	22	26	33	37	40	41	48	20	27	30	35	36	38	42	46	15	20	22	28	28	29	32	35		
	22	26	31	38	44	47	49	57	23	31	35	42	42	44	49	53	17	23	26	32	32	34	38	41		
	7	8	10	13	15	16	17	20	8	10	12	13	14	14	16	17	7	9	10	12	12	13	14	16		
	10	12	14	19	22	24	24	28	10	14	16	18	18	19	21	23	9	11	13	16	16	17	19	21		
	14	16	19	26	29	32	33	38	13	17	20	22	23	24	26	29	11	15	17	20	21	21	24	26		
	17	20	24	33	37	40	41	48	16	21	24	27	27	28	32	35	13	18	20	25	25	26	29	31		
	20	24	28	38	43	47	48	57	19	24	28	31	32	33	37	40	16	21	23	28	29	30	33	36		
	7	9	10	14	16	17	18	20	8	11	13	15	15	16	18	19	7	9	11	14	14	14	16	18		
	10	13	15	20	23	25	25	30	11	15	17	20	20	21	23	25	9	12	14	18	18	19	21	23		
	14	17	20	27	30	33	34	40	14	19	21	25	25	26	29	32	12	15	18	23	23	24	27	29		
	18	21	25	34	38	42	43	50	17	23	26	30	31	32	36	39	14	19	21	26	26	28	32	35		
	21	25	29	40	45	49	50	59	20	26	30	35	36	37	41	45	16	22	25	32	32	34	37	41		
	8	10	12	16	19	20	23	10	13	15	18	18	19	21	23	9	11	12	16	16	17	19	21			
	12	15	17	23	26	28	29	33	13	17	20	23	24	25	27	30	11	14	16	21	21	22	25	27		
	16	20	23	30	34	37	38	45	17	22	25	30	30	31	35	38	14	18	21	27	27	28	32	35		
	21	25	29	38	43	47	48	56	20	27	30	36	36	38	42	46	16	22	25	33	33	34	38	42		
	24	29	34	45	51	56	57	67	23	31	35	42	42	44	49	53	19	25	29	38	38	40	44	48		
	8	10	11	15	17	19	19	23	8	11	13	15	15	16	18	19	8	10	12	14	14	15	16	18		
	12	14	17	22	25	28	28	33	11	15	17	20	20	21	23	25	10	14	16	19	19	19	24	24		
	16	19	22	30	34	37	38	44	14	19	21	25	25	26	29	32	13	17	20	23	24	25	27	30		
	20	24	28	37	42	47	47	55	17	23	26	30	31	32	36	39	16	21	24	28	29	30	33	36		
	24	29	33	44	50	54	55	65	20	26	30	35	36	37	41	45	18	24	28	33	33	34	38	42		
	9	10	12	16	18	20	20	24	9	12	14	17	17	18	20	22	8	11	13	16	16	17	18	20		
	12	15	18	23	26	28	29	34	12	16	18	22	23	23	26	29	11	14	17	21	21	22	24	26		
	17	20	24	31	35	38	39	46	15	20	23	28	29	30	33	36	14	18	21	26	27	28	31	34		
	21	25	30	39	44	48	49	57	18	24	27	34	35	36	40	44	17	22	25	32	32	33	37	41		
	25	30	35	45	52	57	58	68	21	28	32	40	40	42	46	51	19	26	29	37	37	39	43	47		
	10	12	14	18	20	22	23	27	11	14	16	20	20	21	23	26	10	13	15	19	19	19	22	24		
	15	18	21	26	30	32	33	38	14	18	21	26	27	28	31	34	13	17	20	24	25	26	29	31		
	20	24	28	35	40	43	44	52	18	23	27	33	34	35	39	43	16	22	25	31	31	33	36	40		
	25	30	35	44	50	54	55	65	21	28	32	40	41	42	47	52	20	26	30	37	38	39	44	46		
	29	35	41	52	59	64	66	76	25	33	37	47	47	49	55	60	23	30	35	43	44	45	51	55		

- Note:
1. Width is dimension away from body in cm
 2. Distance is vertical lift in cm
 3. Percent pertains to industrial population
 4. Italicized values exceed 8 hr physiological criteria

Snook, S. H. and Ciriello, V. M., The design of manual handling tasks: revised tables of maximum acceptable weights and forces, Ergonomics, 34, 9, 1991

Didapatkan Lebar: 34 cm. Jarak: 62.8 cm (terletak diantara 76 cm dan 51 cm), Frekuensi Pengangkatannya: 4 jam sekali (terletak diantara 8 jam dan 30 menit), dan Persentase populasi yang dapat melakukan pekerjaan tersebut tanpa mengalami kelelahan yang berarti sebesar 88.1171% (Terletak diantara 75% dan 90%). Berikut ini merupakan hasil interpolasinya:

Untuk Jarak 76 cm, persentase 90%: 20.8667 kg

Untuk Jarak 76 cm, persentase 75%: 30.3333 kg

Untuk Jarak 51 cm, persentase 90%: 21.8867 kg.

Untuk Jarak 51 cm, persentase 75%: 35.3333 kg

Untuk Jarak 76 cm:

$$\frac{90 - 75}{90 - 88.1171} = \frac{20.8667 - 30.3333}{20.8667 - x}$$

$$15(20.8667 - x) = 1.8829(-9.4666)$$

$$313.0005 - 15x = -17.8247$$

$$-15x = -17.8247 - 313.0005$$

$$x = \frac{330.8252}{15} = 22.055 \text{ kg}$$

Untuk Jarak 51 cm:

$$\frac{90 - 75}{90 - 88.1171} = \frac{20.8667 - 30.3333}{20.8667 - x}$$

$$15(20.8667 - x) = 1.8829(-13.4666)$$

$$328.0005 - 15x = -25.3363$$

$$-15x = -25.3363 - 328.0005$$

$$x = \frac{353.3568}{15} = 23.5571 \text{ kg}$$

Interpolasi Akhir:

$$\frac{76 - 51}{76 - 62.8} = \frac{22.055 - 23.5571}{22.055 - x}$$

$$25(22.055 - x) = 13.2(-1.5021)$$

$$551.375 - 25x = -19.8277$$

$$-25x = -19.8277 - 551.375$$

$$x = \frac{571.2027}{25} = 22.8484 \text{ kg}$$

5. Untuk Gerakan Mengangkat (*Lifting*) Kardus Berisi Kayu Hasil Gerinda dari Lantai menuju Stasiun Pola:

Maximum Acceptable Weight of Lift for Males (kg)

Width Distance Percent	Floor level to knuckle height One lift every										Knuckle height to shoulder height One lift every										Shoulder height to arm reach One lift every																											
	5		9		14		1		2		5		30		8		5		9		14		1		2		5		30		8		5		9		14		1		2		5		30		8	
	s		s		s		min		min		min		min		h		s		s		s		min		min		min		min		h		s		s		s		min		min		min		h			
90	6	7	9	11	13	14	14	17	8	10	12	13	14	14	16	17	6	8	9	10	10	11	12	13																								
	9	11	13	16	19	20	21	24	10	14	16	18	18	19	21	23	8	10	12	14	14	14	16	17																								
	12	15	17	22	25	27	28	32	13	17	20	22	23	24	26	29	10	13	15	17	17	18	20	22																								
	15	18	21	28	31	34	35	41	16	21	24	27	27	28	32	35	11	16	18	21	21	22	24	27																								
	18	22	25	33	37	40	41	48	19	24	28	31	32	33	37	40	14	18	21	24	24	25	28	31																								
75	6	8	9	12	13	15	15	17	8	11	13	15	15	16	18	19	6	8	9	12	12	12	14	15																								
	9	11	13	17	19	21	22	25	11	15	17	20	20	21	23	25	8	11	12	15	15	16	18	20																								
	13	15	18	23	26	29	29	34	14	19	21	25	25	26	29	32	10	14	16	19	20	20	23	25																								
	16	19	22	29	33	35	36	42	17	23	26	30	31	32	36	39	13	17	19	23	24	25	27	30																								
	19	22	26	34	38	42	43	50	20	26	30	35	36	37	41	45	16	19	22	27	27	29	32	35																								
51	8	9	11	13	15	16	17	20	10	13	15	18	19	21	23	7	10	11	14	14	14	16	18																									
	11	13	15	19	22	24	24	28	13	17	20	23	24	25	27	30	10	13	15	18	18	19	21	23																								
	15	18	21	26	29	32	33	38	17	22	25	30	30	31	35	38	12	16	19	23	23	24	27	29																								
	18	22	26	33	37	40	41	48	20	27	30	35	36	38	42	46	15	20	22	28	28	29	32	35																								
	22	26	31	38	44	47	49	57	23	31	35	42	42	44	49	53	17	23	26	32	32	34	38	41																								
25	7	8	10	13	15	16	17	20	8	10	12	13	14	14	16	17	7	9	10	12	12	13	14	16																								
	10	12	14	19	22	24	24	28	10	14	16	18	18	19	21	23	9	11	13	16	16	17	19	21																								
	14	16	19	26	29	32	33	38	13	17	20	22	23	24	26	29	11	15	17	20	21	21	24	26																								
	17	20	24	33	37	40	41	48	16	21	24	27	27	28	32	35	13	18	20	25	25	26	29	31																								
	20	24	28	38	43	47	48	57	19	24	28	31	32	33	37	40	16	21	23	28	29	30	33	36																								
90	7	9	10	14	16	17	18	20	8	11	13	15	15	16	18	19	7	9	11	14	14	14	16	18																								
	10	13	15	20	23	25	25	30	11	15	17	20	20	21	23	25	9	12	14	18	18	19	21	23																								
	14	17	20	27	30	33	34	40	14	19	21	25	25	26	29	32	12	15	18	23	23	24	27	29																								
	18	21	25	34	38	42	43	50	17	23	26	30	31	32	36	39	14	19	21	28	28	29	32	35																								
	21	25	29	40	45	49	50	59	20	26	30	35	36	37	41	45	16	22	25	32	32	34	37	41																								
51	8	10	12	16	19	20	23	23	10	13	15	18	19	21	23	9	11	12	16	16	17	19	21																									
	12	15	17	23	26	29	29	33	13	17	20	23	24	25	27	30	11	14	16	21	21	22	25	27																								
	16	20	23	30	34	37	38	45	17	22	25	30	30	31	35	38	14	18	21	27	27	28	32	35																								
	21	25	29	38	43	47	48	56	20	27	30	36	36	38	42	46	16	22	25	33	33	34	38	42																								
	24	29	34	45	51	56	57	67	23	31	35	42	42	44	49	53	19	25	29	38	38	40	44	48																								
76	8	10	11	15	17	19	19	23	8	11	13	15	15	16	18	19	8	10	12	14	14	15	16	18																								
	12	14	17	22	25	28	28	33	11	15	17	20	20	21	23	25	10	14	16	19	19	19	24	24																								
	16	19	22	30	34	37	38	44	14	19	21	25	25	26	29	32	13	17	20	23	24	25	27	30																								
	20	24	28	37	42	47	47	55	17	23	26	30	31	32	36	39	16	21	24	28	29	30	33	36																								
	24	29	33	44	50	54	56	65	20	26	30	35	36	37	41	45	18	24	28	33	33	34	38	42																								
34	9	10	12	16	18	20	20	24	9	12	14	17	17	18	20	22	8	11	13	16	16	17	18	20																								
	12	15	18	23	26	29	29	34	12	16	18	22	23	23	26	29	11	14	17	21	21	22	24	26																								
	17	20	24	31	35	38	39	46	15	20	23	28	29	30	33	36	14	18	21	26	27	28	31	34																								
	21	25	30	39	44	48	49	57	18	24	27	34	35	36	40	44	17	22	25	32	32	33	37	41																								
	25	30	35	45	52	57	58	68	21	28	32	40	40	42	46	51	19	26	29	37	37	39	43	47																								
25	10	12	14	18	20	22	23	27	11	14	16	20	20	21	23	26	10	13	15	19	19	19	22	24																								
	15	18	21	26	30	32	33	38	14	18	21	26	27	28	31	34	13	17	20	24	25	26	29	31																								
	20	24	28	35	40	43	44	52	18	23	27	33	34	35	39	43	16	22	25	31	31	33	36	40																								
	26	30	35	44	50	54	55	65	21	28	32	40	41	42	47	52	20	28	30	37	38	39	44	46																								
	29	35	41	52	59	64	66	76	25	33	37	47	47	49	55	60	23	30	35	43	44	45	51	55																								

Snook, S. H. and Ciriello, V. M., The design of manual handling tasks: revised tables of maximum acceptable weights and forces, *Ergonomics*, 34, 9, 1991

Didapatkan Lebar: 34 cm. Jarak: 65.4 cm (terletak diantara 76 cm dan 51 cm), Frekuensi Pengangkatannya: 4 jam sekali (terletak diantara 8 jam dan 30 menit), dan Persentase populasi yang dapat melakukan pekerjaan tersebut tanpa mengalami kelelahan yang berarti sebesar 83.3787% (Terletak diantara 75% dan 90%). Berikut ini merupakan hasil interpolasinya:

Untuk Jarak 76 cm, persentase 90%: 20.8667 kg

Untuk Jarak 76 cm, persentase 75%: 30.3333 kg

Untuk Jarak 51 cm, persentase 90%: 21.8867 kg.

Untuk Jarak 51 cm, persentase 75%: 35.3333 kg

Untuk Jarak 76 cm:

$$\frac{90 - 75}{90 - 83.3787} = \frac{20.8667 - 30.3333}{20.8667 - x}$$

$$15(20.8667 - x) = 6.6213(-9.4666)$$

$$313.0005 - 15x = -62.6812$$

$$-15x = -62.6812 - 313.0005$$

$$x = \frac{375.6817}{15} = 25.0454 \text{ kg}$$

Untuk Jarak 51 cm:

$$\frac{90 - 75}{90 - 83.3787} = \frac{20.8667 - 30.3333}{20.8667 - x}$$

$$15(20.8667 - x) = 6.6213(-13.4666)$$

$$328.0005 - 15x = -89.1664$$

$$-15x = -89.1664 - 328.0005$$

$$x = \frac{427.1669}{15} = 27.8111 \text{ kg}$$

Interpolasi Akhir:

$$\frac{76 - 51}{76 - 65.4} = \frac{25.0454 - 27.8111}{25.0454 - x}$$

$$25(25.0454 - x) = 10.6(-2.7657)$$

$$626.135 - 25x = -29.3164$$

$$-25x = -29.3164 - 626.135$$

$$x = \frac{655.4514}{25} = 26.2181 \text{ kg}$$

6. Untuk Gerakan Membawa (*Carrying*) Kardus Berisi Kayu Hasil Gerinda menuju Stasiun Pola:

Height Percent	2.1 m carry One carry every						4.3 m carry One carry every						8.5 m carry One carry every									
	6 s	12 s	1 min	2 min	5 min	30 hr	8 hr	6 s	12 s	1 min	2 min	5 min	30 hr	8 hr	6 s	12 s	1 min	2 min	5 min	30 hr	8 hr	
Males																						
111	90	10	14	17	17	19	21	25	9	11	15	15	17	19	22	10	11	13	13	15	17	20
	75	14	19	23	23	26	29	34	13	16	21	21	23	26	30	13	15	18	18	20	23	27
	50	19	25	30	30	33	38	44	17	20	27	27	30	34	39	17	19	23	24	26	29	35
	25	23	30	37	37	41	46	54	20	25	33	33	37	41	48	21	24	29	29	32	36	43
	10	27	35	43	43	48	54	63	24	29	38	39	43	48	57	24	28	34	34	38	42	50
79	90	13	17	21	21	23	26	31	11	14	18	19	21	23	27	13	15	17	18	20	22	26
	75	18	23	28	29	32	36	42	16	19	25	25	28	32	37	17	20	24	24	27	30	35
	50	23	30	37	37	41	46	54	20	25	32	33	36	41	48	22	26	31	31	35	39	46
	25	28	37	45	46	51	57	67	25	30	40	40	45	50	59	27	32	38	38	42	48	56
	10	33	43	53	53	59	66	78	29	35	47	47	52	59	69	32	38	44	45	50	56	65
Females																						
105	90	11	12	13	13	13	13	18	9	10	13	13	13	18	10	11	12	12	12	12	16	
	75	13	14	15	15	16	16	21	11	12	15	15	16	21	12	13	14	14	14	14	19	
	50	15	16	18	18	18	18	25	12	13	18	18	18	24	14	15	16	16	16	16	22	
	25	17	18	20	20	21	21	28	14	15	20	20	21	28	15	17	18	18	19	19	25	
	10	19	20	22	22	23	23	31	16	17	22	22	23	31	17	19	20	20	21	21	28	
72	90	13	14	16	16	16	16	22	10	11	14	14	14	20	12	12	14	14	14	14	19	
	75	15	17	18	18	19	19	25	11	13	16	16	17	23	14	15	16	16	17	17	23	
	50	17	19	21	21	22	22	29	13	15	19	19	20	26	16	17	19	19	20	20	26	
	25	20	22	24	24	25	25	33	15	17	22	22	22	30	18	19	21	22	22	22	30	
	10	22	24	27	27	28	28	37	17	19	24	24	25	33	20	21	24	24	25	25	33	

- Notes:
1. Height is vertical distance floor to hands
 2. Percent pertains to industrial population
 3. Italicized values exceed 8 hr physiological criteria

Didapatkan Ketinggian: 90.7 cm (terletak diantara 111 cm dan 79 cm). Jarak: 3.25 m (terletak diantara 2.1 m dan 4.3 m), Frekuensi Pengangkatannya: 4 jam sekali (terletak diantara 8 jam dan 30 menit), dan Persentase populasi yang dapat melakukan pekerjaan tersebut tanpa mengalami kelelahan yang berarti sebesar 89.3875% (Terletak diantara 75% dan 90%). Berikut ini merupakan hasil interpolasinya:

Untuk Ketinggian 111 cm, Jarak 2.1 m, persentase 90%:

$$\frac{8 - 0.5}{8 - 4} = \frac{25 - 21}{25 - x}$$

$$7.5(25 - x) = 4(4)$$

$$187.5 - 7.5x = 16$$

$$-7.5x = 16 - 187.5$$

$$x = \frac{171.5}{7.5} = 22.8667 \text{ kg}$$

Untuk Ketinggian 111 cm, Jarak 2.1 m, persentase 75%:

$$\frac{8 - 0.5}{8 - 4} = \frac{34 - 29}{34 - x}$$

$$7.5(34 - x) = 4(5)$$

$$255 - 7.5x = 20$$

$$-7.5x = 20 - 255$$

$$x = \frac{235}{7.5} = 31.3333 \text{ kg}$$

Untuk Ketinggian 111 cm, Jarak 4.3 m, persentase 90%:

$$\frac{8 - 0.5}{8 - 4} = \frac{22 - 19}{22 - x}$$

$$7.5(22 - x) = 4(3)$$

$$165 - 7.5x = 12$$

$$-7.5x = 12 - 165$$

$$x = \frac{153}{7.5} = 20.4 \text{ kg}$$

Untuk Ketinggian 111 cm, Jarak 4.3 m, persentase 75%:

$$\frac{8 - 0.5}{8 - 4} = \frac{30 - 26}{30 - x}$$

$$7.5(30 - x) = 4(4)$$

$$225 - 7.5x = 16$$

$$-7.5x = 16 - 225$$

$$x = \frac{269}{7.5} = 27.8667 \text{ kg}$$

Untuk Ketinggian 79 cm, Jarak 2.1 m, persentase 90%:

$$\frac{8 - 0.5}{8 - 4} = \frac{31 - 26}{31 - x}$$

$$7.5(31 - x) = 4(5)$$

$$232.5 - 7.5x = 20$$

$$-7.5x = 20 - 232.5$$

$$x = \frac{212.5}{7.5} = 28.3333 \text{ kg}$$

Untuk Ketinggian 79 cm, Jarak 2.1 m, persentase 75%:

$$\frac{8 - 0.5}{8 - 4} = \frac{42 - 36}{42 - x}$$

$$7.5(42 - x) = 4(6)$$

$$315 - 7.5x = 24$$

$$-7.5x = 24 - 315$$

$$x = \frac{291}{7.5} = 38.8 \text{ kg}$$

Untuk Ketinggian 79 cm, Jarak 4.3 m, persentase 90%:

$$\frac{8 - 0.5}{8 - 4} = \frac{37 - 23}{37 - x}$$

$$7.5(37 - x) = 4(4)$$

$$202.5 - 7.5x = 16$$

$$-7.5x = 16 - 202.5$$

$$x = \frac{186.5}{7.5} = 24.8667 \text{ kg}$$

Untuk Ketinggian 79 cm, Jarak 4.3 m, persentase 75%:

$$\frac{8 - 0.5}{8 - 4} = \frac{37 - 32}{37 - x}$$

$$7.5(37 - x) = 4(5)$$

$$277.5 - 7.5x = 20$$

$$-7.5x = 20 - 277.5$$

$$x = \frac{257.5}{7.5} = 34.3333 \text{ kg}$$

Untuk Ketinggian 111 cm, Jarak 2.1 m:

$$\frac{90 - 75}{90 - 89.3875} = \frac{22.8667 - 31.3333}{22.8667 - x}$$

$$15(22.8667 - x) = 0.6125(-8.4666)$$

$$343.0005 - 15x = -5.1858$$

$$-15x = -5.1858 - 343.0005$$

$$x = \frac{348.1869}{15} = 23.2124 \text{ kg}$$

Untuk Ketinggian 111 cm, Jarak 4.3 m:

$$\frac{90 - 75}{90 - 89.3875} = \frac{20.4 - 27.8867}{20.4 - x}$$

$$15(20.4 - x) = 0.6125(-7.4667)$$

$$306 - 15x = -4.5734$$

$$-15x = -4.5734 - 306$$

$$x = \frac{310.5734}{15} = 20.7049 \text{ kg}$$

Untuk Ketinggian 79 cm, Jarak 2.1 m:

$$\frac{90 - 75}{90 - 89.3875} = \frac{28.3333 - 38.8}{28.3333 - x}$$

$$15(28.3333 - x) = 0.6125(-10.4667)$$

$$424.9995 - 15x = -6.4109$$

$$-15x = -6.4109 - 424.9995$$

$$x = \frac{431.4104}{15} = 28.7607 \text{ kg}$$

Untuk Ketinggian 79 cm, Jarak 4.3 m:

$$\frac{90 - 75}{90 - 89.3875} = \frac{24.8667 - 34.3333}{24.8667 - x}$$

$$15(24.8667 - x) = 0.6125(-9.4666)$$

$$373.0005 - 15x = -5.7983$$

$$-15x = -5.7983 - 373.0005$$

$$x = \frac{378.7988}{15} = 25.2533 \text{ kg}$$

Untuk Ketinggian 111 cm:

$$\frac{4.3 - 2.1}{4.3 - 3.25} = \frac{20.7049 - 23.2124}{20.7049 - x}$$

$$2.2(20.7049 - x) = 1.05(-2.5075)$$

$$45.5508 - 2.2x = -2.6329$$

$$-2.2x = -2.6329 - 45.5508$$

$$x = \frac{48.1837}{2.2} = 21.9017 \text{ kg}$$

Untuk Ketinggian 79 cm:

$$\frac{4.3 - 2.1}{4.3 - 3.25} = \frac{25.2533 - 28.7607}{25.2533 - x}$$

$$2.2(25.2533 - x) = 1.05(-3.5074)$$

$$55.5573 - 2.2x = -3.6828$$

$$-2.2x = -3.6828 - 55.5573$$

$$x = \frac{59.2401}{2.2} = 26.9273 \text{ kg}$$

Interpolasi Akhir:

$$\frac{111 - 79}{111 - 90.7} = \frac{21.9017 - 26.9273}{21.9017 - x}$$

$$32(21.9017 - x) = 20.3(-5.0256)$$

$$700.8544 - 32x = -102.0197$$

$$-32x = -102.0197 - 700.8544$$

$$x = \frac{802.8741}{32} = 25.0898 \text{ kg}$$

7. Untuk Gerakan Mengangkat (*Lifting*) Kardus Berisi Kayu Hasil Stasiun Pola dari Lantai:

Maximum Acceptable Weight of Lift for Males (kg)

Width Distance Percent	Floor level to knuckle height One lift every								Knuckle height to shoulder height One lift every								Shoulder height to arm reach One lift every							
	5 s	9 s	14 s	1 min	2 min	5 min	30 min	8 h	5 s	9 s	14 s	1 min	2 min	5 min	30 min	8 h	5 s	9 s	14 s	1 min	2 min	5 min	30 min	8 h
90	6	7	9	11	13	14	14	17	8	10	12	13	14	14	16	17	6	8	9	10	10	11	12	13
75	9	11	13	16	19	20	21	24	10	14	16	18	18	19	21	23	8	10	12	14	14	14	16	17
50	12	16	17	22	25	27	28	32	13	17	20	22	23	24	26	29	10	13	15	17	17	18	20	22
25	15	18	21	28	31	34	35	41	16	21	24	27	27	28	32	35	11	16	18	21	21	22	24	27
10	18	22	25	33	37	40	41	48	19	24	28	31	32	33	37	40	14	18	21	24	24	25	28	31
75	6	8	9	12	13	15	15	17	8	11	13	15	15	16	18	19	6	8	9	12	12	12	14	15
51	9	11	13	17	19	21	22	25	11	15	17	20	20	21	23	25	8	11	12	15	15	16	18	20
50	13	15	18	23	26	28	29	34	14	19	21	25	25	26	29	32	10	14	16	19	20	20	23	25
25	16	19	22	29	33	35	36	42	17	23	26	30	31	32	36	39	13	17	19	23	24	25	27	30
10	19	22	26	34	38	42	43	50	20	26	30	35	36	37	41	45	15	19	22	27	27	29	32	35
75	8	9	11	13	15	16	17	20	10	13	15	18	18	19	21	23	7	10	11	14	14	14	16	18
50	11	13	15	19	22	24	24	28	13	17	20	23	24	25	27	30	10	13	15	18	18	19	21	23
25	15	18	21	26	29	32	33	38	17	22	25	30	30	31	35	38	12	16	19	23	23	24	27	29
10	18	22	26	33	37	40	41	48	20	27	30	36	36	38	42	46	15	20	22	28	28	29	32	35
75	7	8	10	13	15	16	17	20	8	10	12	13	14	14	16	17	7	9	10	12	12	13	14	16
50	10	12	14	19	22	24	24	28	10	14	16	18	18	19	21	23	9	11	13	16	16	17	19	21
25	14	16	19	26	29	32	33	38	13	17	20	22	23	24	26	29	11	15	17	20	21	21	24	26
10	17	20	24	33	37	40	41	48	16	21	24	27	27	28	32	35	13	18	20	25	25	26	29	31
75	20	24	28	38	43	47	48	57	19	24	28	31	32	33	37	40	16	21	23	28	29	30	33	36
50	7	9	10	14	16	17	18	20	8	11	13	15	15	16	18	19	7	9	11	14	14	14	16	18
25	10	13	15	20	23	25	25	30	11	15	17	20	20	21	23	25	9	12	14	18	18	19	21	23
75	14	17	20	27	30	33	34	40	14	19	21	25	25	26	29	32	12	15	18	23	23	24	27	29
50	18	21	25	34	38	42	43	50	17	23	26	30	31	32	36	39	14	19	21	28	28	29	32	35
25	21	25	29	40	45	49	50	59	20	26	30	35	36	37	41	45	16	22	25	32	32	34	37	41
75	8	10	12	16	18	19	20	23	10	13	15	18	18	19	21	23	9	11	12	16	16	17	19	21
50	12	15	17	23	26	28	29	33	13	17	20	23	24	25	27	30	11	14	16	21	21	22	25	27
25	16	20	23	30	34	37	38	45	17	22	25	30	30	31	35	38	14	18	21	27	27	28	32	35
75	21	25	29	38	43	47	48	56	20	27	30	36	36	38	42	46	16	22	25	33	33	34	38	42
50	24	29	34	45	51	56	57	67	23	31	35	42	42	44	49	53	19	25	29	38	38	40	44	48
25	8	10	11	15	17	19	19	23	8	11	13	15	15	16	18	19	8	10	12	14	14	15	16	18
75	12	14	17	22	25	28	28	33	11	15	17	20	20	21	23	25	10	14	16	19	19	19	24	24
50	16	19	22	30	34	37	38	44	14	19	21	25	25	26	29	32	13	17	20	23	24	25	27	30
25	20	24	28	37	42	47	47	55	17	23	26	30	31	32	36	39	16	21	24	28	29	30	33	36
75	24	29	33	44	50	54	55	65	20	26	30	35	36	37	41	45	18	24	28	33	33	34	38	42
50	9	10	12	16	18	20	20	24	9	12	14	17	17	18	20	22	8	11	13	16	16	17	18	20
25	12	15	18	23	26	28	29	34	12	16	18	22	23	23	26	29	11	14	17	21	21	22	24	26
75	17	20	24	31	35	38	39	46	15	20	23	28	29	30	33	36	14	18	21	26	27	28	31	34
50	21	25	30	39	44	48	49	57	18	24	27	34	35	36	40	44	17	22	25	32	32	33	37	41
25	25	30	35	46	52	57	58	68	21	28	32	40	40	42	46	51	19	26	29	37	37	39	43	47
75	10	12	14	18	20	22	23	27	11	14	16	20	20	21	23	26	10	13	15	19	19	19	22	24
50	15	18	21	26	30	32	33	38	14	18	21	26	27	28	31	34	13	17	20	24	25	26	29	31
25	20	24	28	35	40	43	44	52	18	23	27	33	34	35	39	43	16	22	25	31	31	33	36	40
75	26	30	35	44	50	54	55	65	21	28	32	40	41	42	47	52	20	26	30	37	38	39	44	46
50	29	35	41	52	59	64	66	76	25	33	37	47	47	49	55	60	23	30	35	43	44	45	51	55

Note:
 1. Width is dimension away from body in cm
 2. Distance is vertical lift in cm
 3. Percent pertains to industrial population
 4. Italicized values exceed 8 hr physiological criteria

Snook, S. H. and Ciriello, V. M., The design of manual handling tasks: revised tables of maximum acceptable weights and forces, *Ergonomics*, 34, 9, 1991

Didapatkan Lebar: 34 cm. Jarak: 48.3 cm (terletak diantara 51 cm dan 25 cm), Frekuensi Pengangkatannya: 8 jam sekali, dan Persentase populasi yang dapat melakukan pekerjaan tersebut tanpa mengalami kelelahan yang berarti sebesar 71.0238% (Terletak diantara 75% dan 50%). Berikut ini merupakan hasil interpolasinya:

Untuk Jarak 51 cm:

$$\frac{75 - 50}{75 - 71.0238} = \frac{34 - x}{34 - 46}$$

$$25(34 - x) = 3.9762(-12)$$

$$850 - 25x = -47.7144$$

$$-25x = -47.7144 - 850$$

$$x = \frac{897.7144}{25} = 35.9086 \text{ kg}$$

Untuk Jarak 25 cm:

$$\frac{75 - 50}{75 - 71.0238} = \frac{38 - 52}{38 - x}$$

$$25(38 - x) = 3.9762(-14)$$

$$950 - 25x = -55.6668$$

$$-25x = -55.6668 - 950$$

$$x = \frac{1005.6668}{25} = 40.2267 \text{ kg}$$

Interpolasi Akhir:

$$\frac{51 - 25}{51 - 48.3} = \frac{35.9086 - 40.2267}{35.9086 - x}$$

$$26(35.9086 - x) = 2.7(-4.3181)$$

$$933.6236 - 26x = -116.5887$$

$$-26x = -116.5887 - 933.6236$$

$$x = \frac{1050.2123}{26} = 40.3928 \text{ kg}$$

8. Untuk Gerakan Mengangkat (*Lifting*) Kardus Berisi Kayu Hasil Stasiun Press dari Lantai:

Maximum Acceptable Weight of Lift for Males (kg)

Width Distance Percent	Floor level to knuckle height One lift every									Knuckle height to shoulder height One lift every									Shoulder height to arm reach One lift every																													
	5			9			14			1			2			5			30			8			5			9			14			1			2			5			30			8		
	s	s	s	s	s	s	s	s	s	min	min	min	min	min	min	min	min	min	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h	h									
90	6	7	9	11	13	14	14	17	8	10	12	13	14	14	16	17	6	8	9	10	10	11	12	13																								
75	9	11	13	16	19	20	21	24	10	14	16	18	18	19	21	23	8	10	12	14	14	14	16	17																								
50	12	15	17	22	25	27	28	32	13	17	20	22	23	24	26	29	10	13	15	17	17	18	20	22																								
25	15	18	21	28	31	34	35	41	16	21	24	27	27	28	32	35	11	16	18	21	21	22	24	27																								
10	18	22	25	33	37	40	41	48	19	24	28	31	32	33	37	40	14	18	21	24	24	25	28	31																								
90	6	8	9	12	13	15	15	17	8	11	13	15	15	16	18	19	6	8	9	12	12	12	14	15																								
75	9	11	13	17	19	21	22	25	11	15	17	20	20	21	23	25	8	11	12	15	15	16	18	20																								
50	13	16	18	23	26	28	29	34	14	19	21	25	25	26	29	32	10	14	16	19	20	20	23	25																								
25	16	19	22	29	33	35	36	42	17	23	26	30	31	32	36	39	13	17	19	23	24	25	27	30																								
10	19	22	26	34	38	42	43	50	20	26	30	35	36	37	41	45	15	19	22	27	27	29	32	35																								
90	8	9	11	13	15	16	17	20	10	13	15	18	18	19	21	23	7	10	11	14	14	14	16	18																								
75	11	13	15	19	22	24	24	28	13	17	20	23	24	25	27	30	10	13	15	18	18	19	21	23																								
50	15	18	21	26	29	32	33	38	17	22	25	30	30	31	35	38	12	16	19	23	23	24	27	29																								
25	18	22	26	33	37	40	41	48	20	27	30	36	36	38	42	46	15	20	22	28	28	29	32	35																								
10	22	26	31	38	44	47	49	57	23	31	35	42	42	44	49	53	17	23	26	32	32	34	38	41																								
90	7	8	10	13	15	16	17	20	8	10	12	13	14	14	16	17	7	9	10	12	12	13	14	16																								
75	10	12	14	19	22	24	24	28	10	14	16	18	18	19	21	23	9	11	13	16	16	17	19	21																								
50	14	16	19	26	29	32	33	38	13	17	20	22	23	24	26	29	11	15	17	20	21	21	24	26																								
25	17	20	24	33	37	40	41	48	16	21	24	27	27	28	32	35	13	18	20	25	25	26	29	31																								
10	20	24	28	38	43	47	48	57	19	24	28	31	32	33	37	40	15	21	23	28	29	30	33	36																								
90	7	9	10	14	16	17	18	20	8	11	13	15	15	16	18	19	7	9	11	14	14	14	16	18																								
75	10	13	15	20	23	25	25	30	11	15	17	20	20	21	23	25	9	12	14	18	18	19	21	23																								
50	14	17	20	27	30	33	34	40	14	19	21	25	25	26	29	32	12	15	18	23	23	24	27	29																								
25	18	21	25	34	38	42	43	50	17	23	26	30	31	32	36	39	14	19	21	28	28	29	32	35																								
10	21	25	29	40	45	49	50	59	20	26	30	35	36	37	41	45	16	22	25	32	32	34	37	41																								
90	8	10	12	16	18	19	20	23	10	13	15	18	18	19	21	23	9	11	12	16	16	17	19	21																								
75	12	15	17	23	26	28	29	33	13	17	20	23	24	25	27	30	11	14	16	21	21	22	25	27																								
50	16	20	23	30	34	37	38	45	17	22	25	30	30	31	35	38	14	18	21	27	27	28	32	35																								
25	21	25	29	38	43	47	48	56	20	27	30	36	36	38	42	46	15	22	25	33	33	34	38	42																								
10	24	29	34	45	51	56	57	67	23	31	35	42	42	44	49	53	19	25	29	38	38	40	44	48																								
90	8	10	11	15	17	19	19	23	8	11	13	15	15	16	18	19	8	10	12	14	14	15	16	18																								
75	12	14	17	22	25	28	28	33	11	15	17	20	20	21	23	25	10	14	16	19	19	19	24	24																								
50	16	19	22	30	34	37	38	44	14	19	21	25	25	26	29	32	13	17	20	23	24	25	27	30																								
25	20	24	28	37	42	47	47	55	17	23	26	30	31	32	36	39	16	21	24	28	29	30	33	36																								
10	24	29	33	44	50	54	55	65	20	26	30	35	36	37	41	45	18	24	28	33	33	34	38	42																								
90	9	10	12	16	18	20	20	24	9	12	14	17	17	18	20	22	8	11	13	16	16	17	18	20																								
75	12	15	18	23	26	28	29	34	12	16	18	22	23	23	26	29	11	14	17	21	21	22	24	26																								
50	17	20	24	31	35	38	39	45	15	20	23	28	29	30	33	36	14	18	21	26	27	28	31	34																								
25	21	25	30	39	44	48	49	57	18	24	27	34	35	36	40	44	17	22	25	32	32	33	37	41																								
10	25	30	35	46	52	57	58	68	21	28	32	40	40	42	46	51	19	26	29	37	37	39	43	47																								
90	10	12	14	18	20	22	23	27	11	14	16	20	20	21	23	26	10	13	15	19	19	19	22	24																								
75	15	18	21	26	30	32	33	38	14	18	21	26	27	28	31	34	13	17	20	24	25	26	29	31																								
50	20	24	28	35	40	43	44	52	18	23	27	33	34	35	39	43	15	22	25	31	31	33	36	40																								
25	26	30	35	44	50	54	55	65	21	28	32	40	41	42	47	52	20	26	30	37	38	39	44	46																								
10	29	35	41	52	59	64	66	76	25	33	37	47	47	49	55	60	23	30	35	43	44	45	51	55																								

Note:
 1. Width is dimension away from body in cm
 2. Distance is vertical lift in cm
 3. Percent pertains to industrial population
 4. Italicized values exceed 8 hr physiological criteria

Snook, S. H. and Ciriello, V. M., The design of manual handling tasks: revised tables of maximum acceptable weights and forces, *Ergonomics*, 34, 9, 1991

Didapatkan Lebar: 34 cm. Jarak: 50.1 cm (terletak diantara 51 cm dan 25 cm), Frekuensi Pengangkatannya: 8 jam sekali, dan Persentase populasi yang dapat melakukan pekerjaan tersebut tanpa mengalami kelelahan yang berarti sebesar 76.9273% (Terletak diantara 75% dan 50%). Berikut ini merupakan hasil interpolasinya:

Untuk Jarak 51 cm:

$$\frac{90 - 75}{90 - 76.9273} = \frac{24 - 34}{24 - x}$$

$$15(24 - x) = 13.0727(-10)$$

$$360 - 15x = -130.727$$

$$-15x = -130.727 - 360$$

$$x = \frac{490.727}{15} = 32.7151 \text{ kg}$$

Untuk Jarak 25 cm:

$$\frac{90 - 75}{90 - 76.9273} = \frac{27 - 38}{27 - x}$$

$$15(27 - x) = 13.0727(-11)$$

$$405 - 15x = -143.7997$$

$$-15x = -143.7997 - 405$$

$$x = \frac{548.7997}{15} = 36.5866 \text{ kg}$$

Interpolasi Akhir:

$$\frac{51 - 25}{51 - 50.1} = \frac{32.7151 - 36.5866}{32.7151 - x}$$

$$26(32.7151 - x) = 0.9(-3.8715)$$

$$850.5926 - 26x = -3.4844$$

$$-26x = -3.4844 - 850.5926$$

$$x = \frac{854.077}{26} = 32.8491 \text{ kg}$$

9. Untuk Gerakan Mengangkat (*Lifting*) Kardus Berisi Produk Mainan Pola Stasiun Cat Semprot dari Lantai:

Maximum Acceptable Weight of Lift for Males (kg)

Width Distance Percent	Floor level to knuckle height One lift every					Knuckle height to shoulder height One lift every					Shoulder height to arm reach One lift every					
	5	9	14	1	2	5	30	8	5	9	14	1	2	5	30	8
	s	s	min	min	h	s	min	h	s	min	min	min	min	min	min	h
90	6	7	9	11	13	14	14	17	8	10	12	13	14	14	16	17
75	9	11	13	16	19	20	21	24	10	14	16	18	18	19	21	23
51	12	16	17	22	25	27	28	32	13	17	20	22	23	24	26	29
25	15	18	21	28	31	34	35	41	16	21	24	27	27	28	32	35
10	18	22	25	33	37	40	41	48	19	24	28	31	32	33	37	40
90	6	8	9	12	13	15	15	17	8	11	13	15	15	16	18	19
75	9	11	13	17	19	21	22	25	11	15	17	20	20	21	23	25
51	13	15	18	23	26	28	29	34	14	19	21	25	25	26	29	32
25	16	19	22	29	33	35	36	42	17	23	26	30	31	32	36	39
10	19	22	26	34	38	42	43	50	20	26	30	35	36	37	41	45
90	8	9	11	13	15	16	17	20	10	13	15	18	19	21	23	
75	11	13	15	19	22	24	24	28	13	17	20	23	24	25	27	30
51	15	18	21	26	29	32	33	38	17	22	25	30	30	31	35	38
25	18	22	26	33	37	40	41	48	20	27	30	36	36	38	42	46
10	22	26	31	38	44	47	49	57	23	31	35	42	42	44	49	53
90	7	8	10	13	15	16	17	20	8	10	12	13	14	14	16	17
75	10	12	14	19	22	24	24	28	10	14	16	18	18	19	21	23
51	14	16	19	26	29	32	33	38	13	17	20	22	23	24	26	29
25	17	20	24	33	37	40	41	48	16	21	24	27	27	28	32	35
10	20	24	28	38	43	47	48	57	19	24	28	31	32	33	37	40
90	7	9	10	14	16	17	18	20	8	11	13	15	15	16	18	19
75	10	13	15	20	23	25	25	30	11	15	17	20	20	21	23	25
51	14	17	20	27	30	33	34	40	14	19	21	25	25	26	29	32
25	18	21	25	34	38	42	43	50	17	23	26	30	31	32	36	39
10	21	25	29	40	45	49	50	59	20	26	30	35	36	37	41	45
90	8	10	12	16	18	19	20	23	10	13	15	18	18	19	21	23
75	12	15	17	23	26	28	29	33	13	17	20	23	24	25	27	30
51	16	20	23	30	34	37	38	45	17	22	25	30	30	31	35	38
25	21	25	29	38	43	47	48	56	20	27	30	36	36	38	42	46
10	24	29	34	45	51	56	57	67	23	31	35	42	42	44	49	53
90	8	10	11	15	17	19	19	23	8	11	13	15	15	16	18	19
75	12	14	17	22	25	28	28	33	11	15	17	20	20	21	23	25
51	16	19	22	30	34	37	38	44	14	19	21	25	25	26	29	32
25	20	24	28	37	42	47	47	55	17	23	26	30	31	32	36	39
10	24	29	33	44	50	54	56	65	20	26	30	35	36	37	41	45
90	9	10	12	16	18	20	20	24	9	12	14	17	17	18	20	22
75	12	15	18	23	26	28	29	34	12	16	18	22	23	23	26	29
51	17	20	24	31	35	38	39	46	15	20	23	28	29	30	33	36
25	21	25	30	39	44	48	49	57	18	24	27	34	35	36	40	44
10	25	30	35	46	52	57	58	68	21	28	32	40	40	42	46	51
90	10	12	14	18	20	22	23	27	11	14	16	20	20	21	23	26
75	15	18	21	26	30	32	33	38	14	18	21	26	27	28	31	34
51	20	24	28	35	40	43	44	52	18	23	27	33	34	35	39	43
25	26	30	35	44	50	54	55	65	21	28	32	40	41	42	47	52
10	29	35	41	52	59	64	66	76	25	33	37	47	47	49	55	60

- Note:
- 1. Width is dimension away from body in cm
 - 2. Distance is vertical lift in cm
 - 3. Percent pertains to industrial population
 - 4. Italicized values exceed 8 hr physiological criteria

Snook, S. H. and Ciriello, V. M., The design of manual handling tasks: revised tables of maximum acceptable weights and forces, *Ergonomics*, 34, 9, 1991

Didapatkan Lebar: 34 cm. Jarak: 60.8 cm (terletak diantara 76 cm dan 51 cm), Frekuensi Pengangkatannya: 4 jam sekali (terletak diantara 8 jam dan 30 menit), dan Persentase populasi yang dapat melakukan pekerjaan tersebut tanpa mengalami kelelahan yang berarti sebesar 86.2214% (Terletak diantara 75% dan 90%). Berikut ini merupakan hasil interpolasinya:

Untuk Jarak 76 cm, persentase 90%: 20.8667 kg

Untuk Jarak 76 cm, persentase 75%: 30.3333 kg

Untuk Jarak 51 cm, persentase 90%: 21.8867 kg.

Untuk Jarak 51 cm, persentase 75%: 35.3333 kg

Untuk Jarak 76 cm:

$$\frac{90 - 75}{90 - 86.2214} = \frac{20.8667 - 30.3333}{20.8667 - x}$$

$$15(20.8667 - x) = 3.7786(-9.4666)$$

$$313.0005 - 15x = -35.7705$$

$$-15x = -35.7705 - 313.0005$$

$$x = \frac{348.771}{15} = 23.2514 \text{ kg}$$

Untuk Jarak 51 cm:

$$\frac{90 - 75}{90 - 86.2214} = \frac{20.8667 - 30.3333}{20.8667 - x}$$

$$15(20.8667 - x) = 3.7786(-13.4666)$$

$$328.0005 - 15x = -50.8849$$

$$-15x = -50.8849 - 328.0005$$

$$x = \frac{378.8854}{15} = 25.259 \text{ kg}$$

Interpolasi Akhir:

$$\frac{76 - 51}{76 - 60.8} = \frac{23.2514 - 25.259}{23.2514 - x}$$

$$25(23.2514 - x) = 15.2(-2.0076)$$

$$581.285 - 25x = -30.5155$$

$$-25x = -30.5155 - 581.285$$

$$x = \frac{611.8005}{25} = 24.472 \text{ kg}$$

10. Untuk Gerakan Membawa (*Carrying*) Kardus Berisi Produk Mainan Pola yang telah di Cat Semprot menuju Stasiun Packaging:

Maximum Acceptable Weight of Carry (kg)

Height	Percent	2.1 m carry One carry every							4.3 m carry One carry every							8.5 m carry One carry every						
		6 s	12 s	1 min	2 min	5 min	30 min	8 hr	6 s	12 s	1 min	2 min	5 min	30 min	8 hr	6 s	12 s	1 min	2 min	5 min	30 min	8 hr
Males																						
111	90	10	14	17	17	19	21	25	9	11	15	15	17	19	22	10	11	13	13	15	17	20
	75	14	19	23	23	26	29	34	13	16	21	21	23	26	30	13	15	18	18	20	23	27
	50	19	25	30	30	33	38	44	17	20	27	27	30	34	39	17	19	23	24	26	29	35
	25	23	30	37	37	41	46	54	20	25	33	33	37	41	48	21	24	29	29	32	36	43
	10	27	35	43	43	48	54	63	24	29	38	39	43	48	57	24	28	34	34	38	42	50
79	90	13	17	21	21	23	26	31	11	14	18	19	21	23	27	13	15	17	18	20	22	26
	75	18	23	28	29	32	36	42	16	19	25	25	28	32	37	17	20	24	24	27	30	35
	50	23	30	37	37	41	46	54	20	25	32	33	36	41	48	22	26	31	31	35	39	46
	25	28	37	45	46	51	57	67	25	30	40	40	45	50	59	27	32	38	38	42	48	56
	10	33	43	53	53	59	66	78	29	35	47	47	52	59	69	32	38	44	45	50	56	65
Females																						
105	90	11	12	13	13	13	13	18	9	10	13	13	13	13	18	10	11	12	12	12	12	16
	75	13	14	15	15	16	16	21	11	12	15	15	16	16	21	12	13	14	14	14	14	19
	50	15	16	18	18	18	18	25	12	13	18	18	18	18	24	14	15	16	16	16	16	22
	25	17	18	20	20	21	21	28	14	15	20	20	21	21	28	15	17	18	18	19	19	25
	10	19	20	22	22	23	23	31	16	17	22	22	23	23	31	17	19	20	20	21	21	28
72	90	13	14	16	16	16	16	22	10	11	14	14	14	14	20	12	12	14	14	14	14	19
	75	15	17	18	18	19	19	25	11	13	16	16	17	17	23	14	15	16	16	17	17	23
	50	17	19	21	21	22	22	29	13	15	19	19	20	20	26	16	17	19	19	20	20	26
	25	20	22	24	24	25	25	33	15	17	22	22	22	22	30	18	19	21	22	22	22	30
	10	22	24	27	27	28	28	37	17	19	24	24	25	25	33	20	21	24	24	25	25	33

- Notes:
1. Height is vertical distance floor to hands
 2. Percent pertains to industrial population
 3. Italicized values exceed 8 hr physiological criteria

Didapatkan Ketinggian: 95.2 cm (terletak diantara 111 cm dan 79 cm). Jarak: 6.3 m (terletak diantara 4.3 m dan 8.5 m), Frekuensi Pengangkatannya: 4 jam sekali (terletak diantara 8 jam dan 30 menit), dan Persentase populasi yang dapat melakukan pekerjaan tersebut tanpa mengalami kelelahan yang berarti sebesar 89.7893% (Terletak diantara 75% dan 90%). Berikut ini merupakan hasil interpolasinya:

Untuk Ketinggian 111 cm, Jarak 4.3 m, persentase 90%: 20.4 kg

Untuk Ketinggian 111 cm, Jarak 4.3 m, persentase 75%: 27.8667 kg

Untuk Ketinggian 111 cm, Jarak 8.5 m, persentase 90%:

$$\frac{8 - 0.5}{8 - 4} = \frac{20 - 17}{20 - x}$$

$$7.5(20 - x) = 4(3)$$

$$150 - 7.5x = 12$$

$$-7.5x = 12 - 150$$

$$x = \frac{138}{7.5} = 18.4 \text{ kg}$$

Untuk Ketinggian 111 cm, Jarak 8.5 m, persentase 75%:

$$\frac{8 - 0.5}{8 - 4} = \frac{27 - 23}{27 - x}$$

$$7.5(27 - x) = 4(4)$$

$$202.5 - 7.5x = 16$$

$$-7.5x = 16 - 202.5$$

$$x = \frac{186.5}{7.5} = 24.8667 \text{ kg}$$

Untuk Ketinggian 79 cm, Jarak 4.3 m, persentase 90%: 24.8667 kg

Untuk Ketinggian 79 cm, Jarak 4.3 m, persentase 75%: 34.3333 kg

Untuk Ketinggian 79 cm, Jarak 8.5 m, persentase 90%:

$$\frac{8 - 0.5}{8 - 4} = \frac{26 - 22}{26 - x}$$

$$7.5(26 - x) = 4(4)$$

$$195 - 7.5x = 16$$

$$-7.5x = 16 - 195$$

$$x = \frac{178}{7.5} = 23.8667 \text{ kg}$$

Untuk Ketinggian 79 cm, Jarak 8.5 m, persentase 75%:

$$\frac{8 - 0.5}{8 - 4} = \frac{35 - 30}{35 - x}$$

$$7.5(35 - x) = 4(5)$$

$$262.5 - 7.5x = 20$$

$$-7.5x = 20 - 262.5$$

$$x = \frac{242.5}{7.5} = 32.3333 \text{ kg}$$

Untuk Ketinggian 111 cm, Jarak 4.3 m:

$$\frac{90 - 75}{90 - 88.7893} = \frac{20.4 - 27.8667}{20.4 - x}$$

$$15(20.4 - x) = 1.2187(-7.4667)$$

$$306 - 15x = -9.0997$$

$$-15x = -9.0997 - 306$$

$$x = \frac{315.0997}{15} = 21.0066 \text{ kg}$$

Untuk Ketinggian 111 cm, Jarak 8.5 m:

$$\frac{90 - 75}{90 - 88.7893} = \frac{18.4 - 24.8667}{18.4 - x}$$

$$15(18.4 - x) = 1.2187(-6.4667)$$

$$276 - 15x = -7.8292$$

$$-15x = -7.8292 - 276$$

$$x = \frac{283.8292}{15} = 18.9219 \text{ kg}$$

Untuk Ketinggian 79 cm, Jarak 4.3 m:

$$\frac{90 - 75}{90 - 88.7893} = \frac{24.8667 - 34.3333}{24.8667 - x}$$

$$15(24.8667 - x) = 1.2187(-9.4666)$$

$$373.0005 - 15x = -11.4612$$

$$-15x = -11.4612 - 373.0005$$

$$x = \frac{384.4617}{15} = 25.6308 \text{ kg}$$

Untuk Ketinggian 79 cm, Jarak 8.5 m:

$$\frac{90 - 75}{90 - 88.7893} = \frac{23.8667 - 32.3333}{23.8667 - x}$$

$$15(23.8667 - x) = 1.2187(-8.4666)$$

$$358.0005 - 15x = -10.2505$$

$$-15x = -10.2505 - 358.0005$$

$$x = \frac{368.251}{15} = 24.5501 \text{ kg}$$

Untuk Ketinggian 111 cm:

$$\frac{8.5 - 4.3}{8.5 - 6.3} = \frac{18.9219 - 21.0066}{18.9219 - x}$$

$$15(18.9219 - x) = 2.2(-2.0847)$$

$$79.472 - 4.2x = -4.5863$$

$$-4.2x = -4.5863 - 79.472$$

$$x = \frac{84.0581}{4.2} = 20.0139 \text{ kg}$$

Untuk Ketinggian 79 cm:

$$\frac{8.5 - 4.3}{8.5 - 6.3} = \frac{24.5501 - 25.6308}{24.5501 - x}$$

$$15(24.5501 - x) = 2.2(-1.0807)$$

$$103.1104 - 4.2x = -2.3775$$

$$-4.2x = -2.3775 - 103.1104$$

$$x = \frac{105.4879}{4.2} = 25.1162 \text{ kg}$$

Interpolasi Akhir:

$$\frac{111 - 79}{111 - 95.2} = \frac{20.0139 - 25.1162}{20.0139 - x}$$

$$32(20.0139 - x) = 15.8(-5.1023)$$

$$640.4448 - 32x = -80.6163$$

$$-32x = -80.6163 - 640.4448$$

$$x = \frac{721.0611}{32} = 22.5332 \text{ kg}$$

11. Untuk Gerakan Mengangkat (*Lifting*) Kardus Berisi Produk Mainan Puzzle Stasiun Cat Kuas dari Lantai:

Maximum Acceptable Weight of Lift for Males (kg)

Width Clearance Percent	Floor level to knuckle height One lift every								Knuckle height to shoulder height One lift every								Shoulder height to arm reach One lift every							
	s				min				s				min				s				min			
	5	9	14	1	2	5	30	8	5	9	14	1	2	5	30	8	5	9	14	1	2	5	30	8
90	6	7	9	11	13	14	14	17	8	10	12	13	14	14	16	17	6	8	9	10	10	11	12	13
75	9	11	13	16	19	20	21	24	10	14	16	18	18	19	21	23	8	10	12	14	14	14	16	17
50	12	16	17	22	25	27	28	32	13	17	20	22	23	24	26	29	10	13	15	17	17	18	20	22
25	16	19	21	28	31	34	35	41	16	21	24	27	27	28	32	35	11	16	18	21	21	22	24	27
10	18	22	25	33	37	40	41	48	19	24	28	31	32	33	37	40	14	18	21	24	24	25	28	31
90	6	8	9	12	13	15	15	17	8	11	13	15	15	16	18	19	6	8	9	12	12	12	14	15
75	9	11	13	17	19	21	22	25	11	15	17	20	20	21	23	25	8	11	12	15	15	16	18	20
50	13	15	18	23	26	28	29	34	14	19	21	25	25	26	29	32	10	14	16	19	20	20	23	25
25	16	19	22	29	33	35	36	42	17	23	26	30	31	32	36	39	13	17	19	23	24	25	27	30
10	19	22	26	34	38	42	43	50	20	26	30	35	36	37	41	45	15	19	22	27	27	29	32	35
90	8	9	11	13	15	16	17	20	10	13	15	18	19	21	23	7	10	11	14	14	14	16	18	
75	11	13	15	19	22	24	24	28	13	17	20	23	24	25	27	30	10	13	15	18	18	19	21	23
50	15	18	21	26	29	32	33	38	17	22	25	30	30	31	35	38	12	16	19	23	23	24	27	29
25	18	22	26	33	37	40	41	48	20	27	30	36	36	38	42	46	15	20	22	28	28	29	32	35
10	22	26	31	38	44	47	49	57	23	31	35	42	42	44	49	53	17	23	26	32	32	34	38	41
90	7	8	10	13	15	16	17	20	8	10	12	13	14	14	16	17	7	9	10	12	12	13	14	16
75	10	12	14	19	22	24	24	28	10	14	16	18	18	19	21	23	9	11	13	16	16	17	19	21
50	14	16	19	26	29	32	33	38	13	17	20	22	23	24	26	29	11	15	17	20	21	21	24	26
25	17	20	24	33	37	40	41	48	16	21	24	27	27	28	32	35	13	18	20	25	25	26	29	31
10	20	24	28	38	43	47	48	57	19	24	28	31	32	33	37	40	15	21	23	28	29	30	33	36
90	7	9	10	14	16	17	18	20	8	11	13	15	15	16	18	19	7	9	11	14	14	14	16	18
75	10	13	15	20	23	25	25	30	11	15	17	20	20	21	23	25	9	12	14	18	18	19	21	23
50	14	17	20	27	30	33	34	40	14	19	21	25	25	26	29	32	12	15	18	23	23	24	27	29
25	18	21	25	34	38	42	43	50	17	23	26	30	31	32	36	39	14	19	21	28	28	29	32	35
10	21	25	29	40	45	49	50	59	20	26	30	35	36	37	41	45	16	22	25	32	32	34	37	41
90	8	10	12	16	18	19	20	23	10	13	15	18	18	19	21	23	9	11	12	16	16	17	19	21
75	12	15	17	23	26	28	29	33	13	17	20	23	24	25	27	30	11	14	16	21	21	22	25	27
50	16	20	23	30	34	37	38	45	17	22	25	30	30	31	35	38	14	18	21	27	27	28	32	35
25	21	25	29	38	43	47	48	56	20	27	30	36	36	38	42	46	16	22	25	33	33	34	38	42
10	24	29	34	45	51	56	57	67	23	31	35	42	42	44	49	53	19	25	29	38	38	40	44	48
90	8	10	11	15	17	19	19	23	8	11	13	15	15	16	18	19	8	10	12	14	14	15	16	18
75	12	14	17	22	25	28	28	33	11	15	17	20	20	21	23	25	10	14	16	18	19	19	24	24
50	16	19	22	30	34	37	38	44	14	19	21	25	25	26	29	32	13	17	20	23	24	25	27	30
25	20	24	28	37	42	47	47	55	17	23	26	30	31	32	36	39	16	21	24	28	29	30	33	36
10	24	29	33	44	50	54	55	65	20	26	30	35	36	37	41	45	18	24	28	33	33	34	38	42
90	9	10	12	16	18	20	20	24	9	12	14	17	17	18	20	22	8	11	13	16	16	17	18	20
75	12	15	18	23	26	28	29	34	12	16	18	22	23	23	26	29	11	14	17	21	21	22	24	26
50	17	20	24	31	35	38	39	46	15	20	23	28	29	30	33	36	14	18	21	26	27	28	31	34
25	21	25	30	39	44	48	49	57	18	24	27	34	35	36	40	44	17	22	25	32	32	33	37	41
10	25	30	35	46	52	57	58	68	21	28	32	40	40	42	46	51	19	26	29	37	37	39	43	47
90	10	12	14	18	20	22	23	27	11	14	16	20	20	21	23	26	10	13	15	19	19	19	22	24
75	15	18	21	26	30	32	33	38	14	18	21	26	27	28	31	34	13	17	20	24	25	26	29	31
50	20	24	28	35	40	43	44	52	18	23	27	33	34	35	39	43	16	22	25	31	31	33	36	40
25	26	30	35	44	50	54	55	65	21	28	32	40	41	42	47	52	20	26	30	37	38	39	44	46
10	29	35	41	52	59	64	66	76	25	33	37	47	47	49	55	60	23	30	35	43	44	45	51	55

Note:
 1. Width is dimension away from body in cm
 2. Distance is vertical lift in cm
 3. Percent pertains to Industrial population
 4. Italicized values exceed 8 hr physiological criteria

Snook, S. H. and Ciriello, V. M., The design of manual handling tasks: revised tables of maximum acceptable weights and forces, Ergonomics, 34, 9, 1991

Didapatkan Lebar: 34 cm. Jarak: 33.4 cm (terletak diantara 51 cm dan 25 cm), Frekuensi Pengangkatannya: 4 jam sekali (terletak diantara 8 jam dan 30 menit), dan Persentase populasi yang dapat melakukan pekerjaan tersebut tanpa mengalami kelelahan yang berarti sebesar 89.3556% (Terletak diantara 75% dan 90%). Berikut ini merupakan hasil interpolasinya:

Untuk Jarak 51 cm, persentase 90%: 21.8867 kg.
 Untuk Jarak 51 cm, persentase 75%: 35.3333 kg
 Untuk Jarak 25 cm, persentase 90%:

$$\frac{8 - 0.5}{8 - 4} = \frac{27 - 23}{27 - x}$$

$$7.5(27 - x) = 4(4)$$

$$202.5 - 7.5x = 16$$

$$-7.5x = 16 - 202.5$$

$$x = \frac{189.5}{7.5} = 24.8667 \text{ kg}$$

Untuk Jarak 25 cm, persentase 75%:

$$\frac{8 - 0.5}{8 - 4} = \frac{38 - 33}{38 - x}$$

$$7.5(38 - x) = 4(5)$$

$$285 - 7.5x = 20$$

$$-7.5x = 20 - 285$$

$$x = \frac{265}{7.5} = 35.3333 \text{ kg}$$

Untuk Jarak 51 cm:

$$\frac{90 - 75}{90 - 89.3556} = \frac{21.8667 - 35.3333}{21.8667 - x}$$

$$15(21.8667 - x) = 0.6444(-13.4666)$$

$$328.0005 - 15x = -8.6779$$

$$-15x = -8.6779 - 328.0005$$

$$x = \frac{336.6784}{15} = 22.4452 \text{ kg}$$

Untuk Jarak 25 cm:

$$\frac{90 - 75}{90 - 89.3556} = \frac{24.8667 - 35.3333}{24.8667 - x}$$

$$15(24.8667 - x) = 0.6444(-13.4666)$$

$$373.0005 - 15x = -6.7447$$

$$-15x = -6.7447 - 373.0005$$

$$x = \frac{379.7452}{15} = 25.3163 \text{ kg}$$

Interpolasi Akhir:

$$\frac{51 - 25}{51 - 33.4} = \frac{22.4452 - 25.3163}{22.4452 - x}$$

$$26(22.4452 - x) = 17.6(-2.8643)$$

$$583.575 - 26x = -50.4117$$

$$-26x = -50.4117 - 583.575$$

$$x = \frac{633.9869}{26} = 24.3841 \text{ kg}$$

12. Untuk Gerakan Membawa (*Carrying*) Kardus Berisi Produk Mainan Puzzle yang telah di Cat Kuas menuju Stasiun Packaging:

Maximum Acceptable Weight of Carry (kg)

Height	Percent	2.1 m carry One carry every						4.3 m carry One carry every						8.5 m carry One carry every							
		6 s	12 s	1 min	2 min	5 min	30 min	8 hr	6 s	12 s	1 min	2 min	5 min	30 min	8 hr	6 s	12 s	1 min	2 min	5 min	30 min
Males																					
90	10	14	17	17	19	<u>21</u>	<u>25</u>	9	11	15	15	17	19	22	10	11	13	13	15	17	20
75	14	19	23	23	26	29	34	13	16	21	21	23	26	30	13	15	18	18	20	23	27
50	19	25	30	30	33	38	44	17	20	27	27	30	34	39	17	19	23	24	26	29	35
25	23	30	37	37	41	46	54	20	25	33	33	37	41	48	21	24	29	29	32	36	43
10	27	35	43	43	48	54	63	24	29	38	39	43	48	57	24	28	34	34	38	42	50
90	13	17	21	21	23	<u>26</u>	<u>31</u>	11	14	18	19	21	23	27	13	15	17	18	20	22	26
75	18	23	28	29	32	36	42	16	19	25	25	28	32	37	17	20	24	24	27	30	35
50	23	30	37	37	41	46	54	20	25	32	33	36	41	48	22	26	31	31	35	39	46
25	28	37	45	46	51	57	67	25	30	40	40	45	50	59	27	32	38	38	42	48	56
10	33	43	53	53	59	66	78	29	35	47	47	52	59	69	32	38	44	45	50	56	65
Females																					
90	11	12	13	13	13	13	18	9	10	13	13	13	13	18	10	11	12	12	12	12	16
75	13	14	15	15	16	16	21	11	12	15	15	16	16	21	12	13	14	14	14	14	19
50	15	16	18	18	18	18	25	12	13	18	18	18	18	24	14	15	16	16	16	16	22
25	17	18	20	20	21	21	28	14	15	20	20	21	21	28	15	17	18	18	19	19	25
10	19	20	22	22	23	23	31	16	17	22	22	23	23	31	17	19	20	20	21	21	28
90	13	14	16	16	16	16	22	10	11	14	14	14	14	20	12	12	14	14	14	14	19
75	15	17	18	18	19	19	25	11	13	16	16	17	17	23	14	15	16	16	17	17	23
50	17	19	21	21	22	22	29	13	15	19	19	20	20	26	16	17	19	19	20	20	26
25	20	22	24	24	25	25	33	15	17	22	22	22	22	30	18	19	21	22	22	22	30
10	22	24	27	27	28	28	37	17	19	24	24	25	25	33	20	21	24	24	25	25	33

Notes:
 1. Height is vertical distance floor to hands
 2. Percent pertains to industrial population
 3. Italicized values exceed 8 hr physiological criteria

Didapatkan Ketinggian: 92.8 cm (terletak diantara 111 cm dan 79 cm). Jarak: 1.58 m (terletak sebelum 2.1 m maka dianggap 2.1 m), Frekuensi Pengangkatannya: 4 jam sekali (terletak diantara 8 jam dan 30 menit), dan Persentase populasi yang dapat melakukan pekerjaan

tersebut tanpa mengalami kelelahan yang berarti sebesar 90%. Berikut ini merupakan hasil interpolasinya:

Untuk Jarak 111 cm: 22.8667 kg.

Untuk Jarak 79 cm: 28.3333 kg

Interpolasi Akhir:

$$\frac{111 - 79}{111 - 92.8} = \frac{22.8667 - 28.3333}{22.8667 - x}$$

$$32(22.8667 - x) = 18.2(-5.4666)$$

$$731.7344 - 32x = -99.4921$$

$$-32x = -99.4921 - 731.7344$$

$$x = \frac{831.2265}{32} = 25.9758 \text{ kg}$$

13. Untuk Gerakan Mengangkat (*Lifting*) Kardus Berisi Kayu Hasil Gerinda dari Lantai menuju Stasiun Press:

Maximum Acceptable Weight of Lift for Males (kg)

Width Distance Percent	Floor level to knuckle height One lift every								Knuckle height to shoulder height One lift every								Shoulder height to arm reach One lift every											
	5	9	14	1	2	5	30	8	5	9	14	1	2	5	30	8	5	9	14	1	2	5	30	8				
	s	s	s	min	min	min	h	s	s	s	min	min	min	h	s	s	s	min	min	min	h	s	s	s	min	min	min	h
90	6	7	9	11	13	14	14	17	8	10	12	13	14	14	16	17	6	8	9	10	10	11	12	13				
75	9	11	13	16	19	20	21	24	10	14	16	18	18	19	21	23	8	10	12	14	14	14	16	17				
25	15	18	21	28	31	34	35	41	15	21	24	27	27	28	32	35	11	16	18	21	21	22	24	27				
10	18	22	25	33	37	40	41	48	19	24	28	31	32	33	37	40	14	18	21	24	24	25	28	31				
90	6	8	9	12	13	15	15	17	8	11	13	15	15	16	18	19	6	8	9	12	12	12	14	15				
75	9	11	13	17	19	21	22	26	11	15	17	20	20	21	23	25	8	11	12	15	15	16	18	20				
51	13	15	18	23	26	29	29	34	14	19	21	25	25	26	29	32	10	14	16	19	20	20	23	25				
25	16	19	22	29	33	35	36	42	17	23	26	30	31	32	36	39	13	17	19	23	24	25	27	30				
10	19	22	26	34	38	42	43	50	20	26	30	35	36	37	41	45	15	19	22	27	27	29	32	35				
90	8	9	11	13	15	16	17	20	10	13	15	18	19	21	23	7	10	11	14	14	14	16	18					
75	11	13	15	19	22	24	24	28	13	17	20	23	24	25	27	30	10	13	15	18	18	19	21	23				
25	15	18	21	26	29	32	33	38	17	22	25	30	30	31	35	38	12	16	19	23	23	24	27	29				
10	18	22	26	33	37	40	41	48	20	27	30	36	36	38	42	46	15	20	22	28	28	29	32	35				
90	7	8	10	13	15	16	17	20	8	10	12	13	14	14	16	17	7	9	10	12	12	13	14	16				
75	10	12	14	19	22	24	24	28	10	14	16	18	18	19	21	23	9	11	13	16	16	17	19	21				
51	14	16	19	26	29	32	33	38	13	17	20	22	23	24	26	29	11	15	17	20	21	21	24	26				
25	17	20	24	33	37	40	41	48	16	21	24	27	27	28	32	35	13	18	20	25	25	26	29	31				
10	20	24	28	38	43	47	48	57	19	24	28	31	32	33	37	40	15	21	23	28	29	30	33	36				
90	7	9	10	14	16	17	18	20	8	11	13	15	15	16	18	19	7	9	11	14	14	14	16	18				
75	10	13	15	20	23	25	25	30	11	15	17	20	20	21	23	25	9	12	14	18	18	19	21	23				
51	14	17	20	27	30	33	34	40	14	19	21	25	25	26	29	32	12	15	18	23	23	24	27	29				
25	18	21	25	34	38	42	43	50	17	23	26	30	31	32	36	39	14	19	21	28	28	29	32	35				
10	21	25	29	40	45	49	50	59	20	26	30	35	36	37	41	45	16	22	25	32	32	34	37	41				
90	8	10	12	16	18	19	20	23	10	13	15	18	18	19	21	23	9	11	12	16	16	17	19	21				
75	12	15	17	23	26	28	29	33	13	17	20	23	24	25	27	30	11	14	16	21	21	22	25	27				
51	16	20	23	30	34	37	38	45	17	22	25	30	30	31	35	38	14	18	21	27	27	28	32	35				
25	21	25	29	38	43	47	48	56	20	27	30	36	36	38	42	46	16	22	25	33	33	34	38	42				
10	24	29	34	45	51	56	57	67	23	31	35	42	42	44	49	53	19	25	29	38	38	40	44	48				
90	8	10	11	15	17	19	19	23	8	11	13	15	15	16	18	19	8	10	12	14	14	15	16	18				
75	12	14	17	22	25	28	28	33	11	15	17	20	20	21	23	25	10	14	16	18	19	19	24	24				
51	16	19	22	30	34	37	38	44	14	19	21	25	25	26	29	32	13	17	20	23	24	25	27	30				
25	20	24	28	37	42	47	47	55	17	23	26	30	31	32	36	39	16	21	24	28	29	30	33	36				
10	24	29	33	44	50	54	56	65	20	26	30	35	36	37	41	45	18	24	28	33	33	34	38	42				
90	9	10	12	16	18	20	20	24	9	12	14	17	17	18	20	22	8	11	13	16	16	17	18	20				
75	12	15	18	23	26	28	29	34	12	16	18	22	23	23	26	29	11	14	17	21	21	22	24	26				
51	17	20	24	31	35	38	39	46	15	20	23	28	29	30	33	36	14	18	21	26	27	28	31	34				
25	21	25	30	39	44	48	49	57	18	24	27	34	35	36	40	44	17	22	25	32	32	33	37	41				
10	25	30	35	46	52	57	58	68	21	28	32	40	40	42	46	51	19	26	29	37	37	39	43	47				
90	10	12	14	18	20	22	23	27	11	14	16	20	20	21	23	26	10	13	15	19	19	19	22	24				
75	15	18	21	26	30	32	33	38	14	18	21	26	27	28	31	34	13	17	20	24	25	26	29	31				
51	20	24	28	35	40	43	44	52	18	23	27	33	34	35	39	43	16	22	25	31	31	33	36	40				
25	26	30	35	44	50	54	55	65	21	28	32	40	41	42	47	52	20	26	30	37	38	39	44	46				
10	29	35	41	52	59	64	66	76	25	33	37	47	47	49	55	60	23	30	35	43	44	45	51	55				

Note:
1. Width is dimension away from body in cm

2. Distance is vertical lift in cm

3. Percent pertains to industrial population

4. Italicized values exceed 8 hr physiological criteria

Snook, S. H. and Ciriello, V. M., The design of manual handling tasks: revised tables of maximum acceptable weights and forces, *Ergonomics*, 34, 9, 1991

Didapatkan Lebar: 34 cm. Jarak: 58.9 cm (terletak diantara 76 cm dan 51 cm), Frekuensi Pengangkatannya: 4 jam sekali (terletak diantara 8 jam dan 30 menit), dan Persentase populasi yang dapat melakukan pekerjaan tersebut tanpa mengalami kelelahan yang berarti sebesar 87.716% (Terletak diantara 75% dan 90%). Berikut ini merupakan hasil interpolasinya:

Untuk Jarak 76 cm, persentase 90%: 20.8667 kg

Untuk Jarak 76 cm, persentase 75%: 30.3333 kg

Untuk Jarak 51 cm, persentase 90%: 21.8867 kg.

Untuk Jarak 51 cm, persentase 75%: 35.3333 kg

Untuk Jarak 76 cm:

$$\frac{90 - 75}{90 - 87.716} = \frac{20.8667 - 30.3333}{20.8667 - x}$$

$$15(20.8667 - x) = 2.284(-9.4666)$$

$$313.0005 - 15x = -21.6217$$

$$-15x = -21.6217 - 313.0005$$

$$x = \frac{334.6222}{15} = 22.3081 \text{ kg}$$

Untuk Jarak 51 cm:

$$\frac{90 - 75}{90 - 87.716} = \frac{20.8667 - 30.3333}{20.8667 - x}$$

$$15(20.8667 - x) = 2.284(-13.4666)$$

$$328.0005 - 15x = -30.7577$$

$$-15x = -30.7577 - 328.0005$$

$$x = \frac{358.7582}{15} = 23.9172 \text{ kg}$$

Interpolasi Akhir:

$$\frac{76 - 51}{76 - 58.9} = \frac{22.3081 - 23.9172}{22.3081 - x}$$

$$25(22.3081 - x) = 17.1(-1.6091)$$

$$557.7025 - 25x = -27.5156$$

$$-25x = -27.5156 - 557.7025$$

$$x = \frac{585.2181}{25} = 23.4087 \text{ kg}$$

14. Untuk Gerakan Membawa (*Carrying*) Kardus Berisi Kayu yang sudah digerinda menuju Stasiun Press:

Height Percent	2.1 m carry One carry every						4.3 m carry One carry every						8.5 m carry One carry every									
	6 s	12 s	1 min	2 min	5 min	30 min	8 hr	6 s	12 s	1 min	2 min	5 min	30 min	8 hr	6 s	12 s	1 min	2 min	5 min	30 min	8 hr	
Males																						
111	90	10	14	17	17	19	21	25	9	11	15	15	17	19	22	10	11	13	13	15	17	20
	75	14	19	23	23	26	29	34	13	16	21	21	23	26	30	13	15	18	18	20	23	27
	50	19	25	30	30	33	38	44	17	20	27	27	30	34	39	17	19	23	24	26	29	35
	25	23	30	37	37	41	46	54	20	25	33	33	37	41	48	21	24	29	29	32	36	43
	10	27	35	43	43	48	54	63	24	29	38	39	43	48	57	24	28	34	34	38	42	50
79	90	13	17	21	21	23	26	31	11	14	18	19	21	23	27	13	15	17	18	20	22	26
	75	18	23	28	29	32	36	42	16	19	25	25	28	32	37	17	20	24	24	27	30	35
	50	23	30	37	37	41	46	54	20	25	32	33	36	41	48	22	26	31	31	35	39	46
	25	28	37	45	46	51	57	67	25	30	40	40	45	50	59	27	32	38	38	42	48	56
	10	33	43	53	53	59	66	78	29	35	47	47	52	59	69	32	38	44	45	50	56	65
Females																						
105	90	11	12	13	13	13	18	18	9	10	13	13	13	18	10	11	12	12	12	12	16	
	75	13	14	15	15	16	16	21	11	12	15	15	16	16	21	12	13	14	14	14	14	19
	50	15	16	18	18	18	18	25	12	13	18	18	18	18	24	14	15	16	16	16	16	22
	25	17	18	20	20	21	21	28	14	15	20	20	21	21	28	15	17	18	18	19	19	25
	10	19	20	22	22	23	23	31	16	17	22	22	23	23	31	17	19	20	20	21	21	28
72	90	13	14	16	16	16	22	22	10	11	14	14	14	20	12	12	14	14	14	14	19	
	75	15	17	18	18	19	25	25	11	13	16	16	17	23	14	15	16	16	17	17	23	
	50	17	19	21	21	22	29	29	13	15	19	19	20	26	16	17	19	19	20	20	26	
	25	20	22	24	24	25	33	33	15	17	22	22	22	30	18	19	21	22	22	22	30	
	10	22	24	27	27	28	37	37	17	19	24	24	25	33	20	21	24	24	25	25	33	

- Notes:
1. Height is vertical distance floor to hands
 2. Percent pertains to industrial population
 3. Italicized values exceed 8 hr physiological criteria

Didapatkan Ketinggian: 92.8 cm (terletak diantara 111 cm dan 79 cm). Jarak: 2.75 m (terletak diantara 2.1 m dan 4.3 m), Frekuensi Pengangkatannya: 4 jam sekali (terletak diantara 8 jam dan 30 menit), dan Persentase populasi yang dapat melakukan pekerjaan tersebut tanpa mengalami kelelahan yang berarti sebesar 89.845% (Terletak diantara 75% dan 90%). Berikut ini merupakan hasil interpolasinya:

Untuk Ketinggian 111 cm, Jarak 2.1 m, persentase 90%: **22.8667 kg.**

Untuk Ketinggian 111 cm, Jarak 2.1 m, persentase 75%: **31.3333 kg.**

Untuk Ketinggian 111 cm, Jarak 4.3 m, persentase 90%: **20.4 kg.**

Untuk Ketinggian 111 cm, Jarak 4.3 m, persentase 75%: **27.8667 kg**

Untuk Ketinggian 79 cm, Jarak 2.1 m, persentase 90%: **28.3333 kg.**

Untuk Ketinggian 79 cm, Jarak 2.1 m, persentase 75%: **38.8 kg.**

Untuk Ketinggian 79 cm, Jarak 4.3 m, persentase 90%: **24.8667 kg.**

Untuk Ketinggian 79 cm, Jarak 4.3 m, persentase 75%: **34.3333 kg**

Untuk Ketinggian 111 cm, Jarak 2.1 m:

$$\frac{90 - 75}{90 - 89.845} = \frac{22.8667 - 31.3333}{22.8667 - x}$$

$$15(22.8667 - x) = 0.155(-8.4666)$$

$$343.0005 - 15x = -1.3123$$

$$-15x = -1.3123 - 343.0005$$

$$x = \frac{344.3128}{15} = 22.9542 \text{ kg}$$

Untuk Ketinggian 111 cm, Jarak 4.3 m:

$$\frac{90 - 75}{90 - 89.845} = \frac{20.4 - 27.8867}{20.4 - x}$$

$$15(20.4 - x) = 0.155(-7.4667)$$

$$306 - 15x = -1.1573$$

$$-15x = -1.1573 - 306$$

$$x = \frac{307.1573}{15} = 20.4772 \text{ kg}$$

Untuk Ketinggian 79 cm, Jarak 2.1 m:

$$\frac{90 - 75}{90 - 89.845} = \frac{28.3333 - 38.8}{28.3333 - x}$$

$$15(28.3333 - x) = 0.155(-10.4667)$$

$$424.9995 - 15x = -1.6223$$

$$-15x = -1.6223 - 424.9995$$

$$x = \frac{374.4678}{15} = 24.9645 \text{ kg}$$

Untuk Ketinggian 79 cm, Jarak 4.3 m:

$$\frac{90 - 75}{90 - 89.845} = \frac{24.8667 - 34.3333}{24.8667 - x}$$

$$15(24.8667 - x) = 0.155(-9.4666)$$

$$373.0005 - 15x = -1.4673$$

$$-15x = -1.4673 - 373.0005$$

$$x = \frac{374.4678}{15} = 24.9645 \text{ kg}$$

Untuk Ketinggian 111 cm:

$$\frac{4.3 - 2.1}{4.3 - 2.75} = \frac{20.4772 - 22.9542}{20.4772 - x}$$

$$2.2(20.4772 - x) = 1.55(-2.5075)$$

$$45.0498 - 2.2x = -3.8394$$

$$-2.2x = -3.8394 - 45.0498$$

$$x = \frac{48.8892}{2.2} = 22.2224 \text{ kg}$$

Untuk Ketinggian 79 cm:

$$\frac{4.3 - 2.1}{4.3 - 2.75} = \frac{24.9645 - 28.4415}{24.9645 - x}$$

$$2.2(24.9645 - x) = 1.55(-3.477)$$

$$54.9219 - 2.2x = -5.3894$$

$$-2.2x = -5.3894 - 54.9219$$

$$x = \frac{60.3109}{2.2} = 27.414 \text{ kg}$$

Interpolasi Akhir:

$$\frac{111 - 79}{111 - 90.7} = \frac{22.2224 - 27.414}{22.2224 - x}$$

$$32(22.2224 - x) = 18.2(-5.1916)$$

$$711.1168 - 32x = -94.4871$$

$$-32x = -94.4871 - 711.1168$$

$$x = \frac{805.6039}{32} = 22.3779 \text{ kg}$$

15. Untuk Gerakan Menurunkan (*Lowering*) Kayu dari Gerobak Pengangkut menuju Lantai Gergaji Besar:

Maximum Acceptable Weight of Lower for Males (kg)

Width Clearance Percent	Floor level to knuckle height One lift every								Knuckle height to shoulder height One lift every								Shoulder height to arm reach One lift every								
	5		9		14		20		5		9		14		20		5		9		14		20		
	s		s		min		min		s		s		min		min		s		s		min		min		
90	7	9	10	12	14	15	16	20	10	11	14	14	15	15	16	19	6	7	9	9	10	10	11	13	
75	10	13	14	18	20	22	22	29	13	16	18	18	21	21	21	26	9	10	12	12	14	14	14	18	
50	14	17	19	23	27	29	30	38	18	20	24	24	27	27	28	34	11	13	15	16	18	18	19	23	
25	17	21	24	29	33	36	37	47	21	25	29	29	34	34	34	42	14	16	19	20	23	23	23	28	
10	20	25	28	34	39	42	44	56	25	29	34	34	39	39	39	49	16	19	22	23	26	26	27	33	
75	51	8	10	11	13	15	16	17	21	11	12	14	15	17	17	18	22	7	8	9	10	12	12	12	15
	75	11	14	15	18	21	23	23	30	14	17	20	21	24	24	30	9	11	13	14	16	16	16	20	
	50	14	18	20	24	28	30	31	40	19	21	25	27	31	31	38	12	14	16	18	21	21	21	26	
	25	18	22	25	30	34	37	39	49	23	26	31	33	38	38	47	15	17	20	22	25	25	26	32	
	10	21	26	29	36	41	44	46	58	27	31	36	38	44	44	55	17	20	24	26	30	30	30	37	
25	90	9	11	12	15	17	18	19	24	12	14	17	18	21	21	26	8	9	11	12	14	14	14	17	
	75	13	16	17	21	24	25	26	34	17	20	23	24	28	28	35	11	13	15	16	19	19	19	24	
	50	17	21	23	27	31	34	35	45	22	25	30	32	36	36	45	14	16	19	21	24	24	25	31	
	25	21	25	29	34	39	42	44	56	29	31	37	39	44	44	56	17	20	24	26	30	30	30	38	
	10	24	31	34	40	46	49	51	66	31	36	43	45	52	52	65	20	23	28	30	35	35	35	44	
76	90	8	10	11	15	17	18	19	24	10	11	14	14	15	15	19	7	8	10	11	12	12	12	15	
	75	12	15	16	21	24	26	26	34	13	16	18	18	21	21	26	10	11	14	15	17	17	17	21	
	50	15	19	21	29	31	34	35	45	18	20	24	24	27	27	34	13	15	17	19	22	22	22	27	
	25	19	24	26	34	39	42	44	56	21	25	29	29	34	34	42	16	18	21	23	27	27	27	33	
	10	25	28	31	40	46	49	51	65	25	29	34	34	39	39	49	18	21	25	27	31	31	31	39	
49	90	9	11	12	15	17	19	19	25	11	12	14	15	17	17	18	22	8	9	10	12	14	14	14	17
	75	12	15	17	22	25	26	28	36	14	17	20	21	24	24	30	10	12	14	16	19	19	19	24	
	50	15	20	22	29	33	35	37	47	19	21	25	27	31	31	38	14	16	18	21	24	24	25	31	
	25	20	25	27	36	41	44	46	58	23	26	31	33	38	38	47	17	19	23	26	30	30	30	37	
	10	23	29	32	42	48	51	54	68	27	31	36	38	44	44	55	19	22	26	30	35	35	35	44	
25	90	10	13	14	17	20	21	22	28	12	14	17	18	21	21	26	9	10	12	14	16	16	16	20	
	75	14	18	19	24	28	30	31	40	17	20	23	24	28	28	35	12	14	17	19	22	22	22	28	
	50	19	24	26	32	37	40	41	54	22	25	30	32	36	36	45	16	18	22	25	29	29	29	36	
	25	23	29	32	40	46	49	51	65	27	31	37	39	44	44	56	20	23	27	31	35	35	36	44	
	10	29	34	38	47	54	58	60	77	31	36	43	45	52	52	65	23	26	31	36	41	41	41	52	
76	90	10	12	13	17	19	21	21	27	11	12	14	15	17	17	18	22	9	10	12	12	14	14	14	18
	75	14	17	19	24	27	29	30	39	14	17	20	21	24	24	30	12	13	16	17	19	19	19	24	
	50	18	23	25	32	36	39	40	51	19	21	25	27	31	31	38	15	17	21	22	25	25	25	31	
	25	23	29	31	39	45	48	50	64	23	26	31	33	38	38	47	19	21	25	27	31	31	31	38	
	10	27	34	37	46	53	57	59	75	27	31	36	38	44	44	55	22	25	30	31	36	36	36	45	
25	90	10	13	14	17	20	22	22	29	11	13	15	17	20	20	24	9	10	12	14	16	16	16	20	
	75	14	18	20	25	28	30	32	40	15	18	21	23	27	27	33	12	14	17	19	22	22	22	27	
	50	19	24	26	33	37	40	42	53	20	23	27	30	35	35	43	16	19	22	24	28	28	28	35	
	25	24	30	33	41	47	50	52	69	24	28	33	37	42	42	53	20	23	29	30	34	34	35	43	
	10	28	35	38	48	55	59	62	78	28	33	39	43	49	49	62	23	27	31	35	40	40	40	50	
25	90	12	15	16	20	23	24	25	32	13	15	18	20	23	23	29	11	12	15	16	19	19	19	23	
	75	17	21	23	28	32	34	36	46	18	21	25	27	31	31	39	15	17	20	22	26	26	26	32	
	50	23	28	31	37	42	46	47	60	23	27	32	35	41	41	51	19	22	26	29	33	33	33	41	
	25	28	35	38	46	53	57	59	76	29	33	39	43	50	50	63	23	27	32	35	41	41	41	51	
	10	33	41	45	54	62	67	70	89	33	39	46	51	58	58	73	27	31	37	41	47	47	48	59	

Note:
 1. Width is dimension away from body in cm
 2. Distance is vertical lift in cm
 3. Percent pertains to industrial population
 4. Italicized values exceed 8 hr physiological criteria

Snook, S. H. and Ciriello, V. M., The design of manual handling tasks: revised tables of maximum acceptable weights and forces, *Ergonomics*, 34, 9, 1991

Didapatkan Lebar: 34 cm. Jarak: 31.3 cm (terletak diantara 51 cm dan 25 cm), Frekuensi Penurunannya: 8 jam sekali, dan Persentase populasi yang dapat melakukan pekerjaan tersebut tanpa mengalami kelelahan yang berarti sebesar 89.7682% (Terletak diantara 75% dan 90%). Berikut ini merupakan hasil interpolasinya:

Untuk Jarak 51 cm:

$$\frac{90 - 75}{90 - 89.7682} = \frac{29 - 40}{29 - x}$$

$$15(29 - x) = 0.2318(-11)$$

$$435 - 15x = -2.5498$$

$$-15x = -2.5498 - 435$$

$$x = \frac{437.5498}{15} = 29.17 \text{ kg}$$

Untuk Jarak 25 cm:

$$\frac{90 - 75}{90 - 89.7682} = \frac{32 - 46}{32 - x}$$

$$15(32 - x) = 0.2318(-14)$$

$$480 - 15x = -3.2452$$

$$-15x = -3.2452 - 480$$

$$x = \frac{483.2452}{15} = 32.2163 \text{ kg}$$

Interpolasi Akhir:

$$\frac{51 - 25}{51 - 31.3} = \frac{29.17 - 32.2163}{29.17 - x}$$

$$26(29.17 - x) = 19.7(-3.0463)$$

$$758.42 - 26x = -60.0121$$

$$-26x = -60.0121 - 758.42$$

$$x = \frac{818.4321}{26} = 31.4782 \text{ kg}$$

16. Untuk Gerakan Menurunkan (*Lowering*) Kardus Potongan Kayu dari Gerobak Pengangkut menuju Lantai Amplas:

Maximum Acceptable Weight of Lower for Males (kg)

Width Clearance Percent	Floor level to knuckle height One lift every								Knuckle height to shoulder height One lift every								Shoulder height to arm reach One lift every																		
	5				14				1				2				5				30				8										
	s				min				h				s				min				h				s				min				h		
90	7	9	10	12	14	15	16	20	10	11	14	14	15	15	16	19	6	7	9	9	10	10	11	13											
75	10	13	14	18	20	22	22	29	13	16	18	18	21	21	21	26	9	10	12	12	14	14	14	18											
50	14	17	19	23	27	29	30	38	18	20	24	24	27	27	28	34	11	13	15	16	18	18	19	23											
25	17	21	24	29	33	36	37	47	21	25	29	29	34	34	34	42	14	16	19	20	23	23	23	28											
10	20	25	28	34	39	42	44	56	25	29	34	34	39	39	39	49	16	19	22	23	26	26	27	33											
75	90	8	10	11	13	15	16	17	21	11	12	14	15	17	17	18	22	7	8	9	10	12	12	12	15										
	75	11	14	15	18	21	23	23	30	14	17	20	21	24	24	24	30	9	11	13	14	16	16	16	20										
	50	14	18	20	24	28	30	31	40	19	21	25	27	31	31	31	38	12	14	16	18	21	21	21	26										
	25	18	22	25	30	34	37	39	49	23	26	31	33	38	38	38	47	15	17	20	22	25	25	26	32										
25	90	9	11	12	15	17	18	19	24	12	14	17	18	21	21	21	26	8	9	11	12	14	14	14	17										
	75	13	16	17	21	24	25	26	34	17	20	23	24	28	28	28	35	11	13	15	16	19	19	19	24										
	50	17	21	23	27	31	34	35	45	22	25	30	32	36	36	37	45	14	16	19	21	24	24	25	31										
	25	21	25	29	34	39	42	44	56	29	31	37	39	44	44	45	56	17	20	24	26	30	30	30	38										
49	90	8	10	11	15	17	18	19	24	10	11	14	14	15	15	16	19	7	8	10	11	12	12	12	15										
	75	12	15	16	21	24	26	26	34	13	16	18	18	21	21	21	26	10	11	14	15	17	17	17	21										
	50	15	19	21	29	31	34	35	45	18	20	24	24	27	27	28	34	13	15	17	19	22	22	22	27										
	25	19	24	26	34	39	42	44	56	21	25	29	29	34	34	34	42	16	18	21	23	27	27	27	33										
25	90	9	11	12	15	17	19	19	25	11	12	14	15	17	17	18	22	8	9	10	12	14	14	14	17										
	75	12	15	17	22	25	26	28	36	14	17	20	21	24	24	24	30	10	12	14	16	19	19	19	24										
	50	15	20	22	29	33	35	37	47	19	21	25	27	31	31	31	38	14	16	18	21	24	24	25	31										
	25	20	25	27	36	41	44	46	58	23	26	31	33	38	38	38	47	17	19	23	26	30	30	30	37										
75	90	10	13	14	17	20	21	22	28	12	14	17	18	21	21	21	26	9	10	12	14	16	16	16	20										
	75	14	18	19	24	28	30	31	40	17	20	23	24	28	28	28	35	12	14	17	19	22	22	22	28										
	50	19	24	26	32	37	40	41	54	22	25	30	32	36	36	37	45	16	18	22	25	29	29	29	36										
	25	23	29	32	40	46	49	51	65	27	31	37	39	44	44	45	56	20	23	27	31	35	35	36	44										
25	90	10	13	14	17	20	22	22	29	11	13	15	17	20	20	20	24	9	10	12	14	16	16	16	20										
	75	14	18	20	25	28	30	32	40	15	18	21	23	27	27	27	33	12	14	17	19	22	22	22	27										
	50	19	24	26	33	37	40	42	53	20	23	27	30	35	35	35	43	16	19	22	24	28	28	28	35										
	25	24	30	33	41	47	50	52	69	24	28	33	37	42	42	43	53	20	23	29	30	34	34	35	43										
90	90	12	15	16	20	23	24	25	32	13	15	18	20	23	23	23	29	11	12	15	16	19	19	19	23										
	75	17	21	23	28	32	34	36	49	18	21	25	27	31	31	32	39	15	17	20	22	26	26	26	32										
	50	23	28	31	37	42	46	47	60	23	27	32	35	41	41	41	51	19	22	26	29	33	33	33	41										
	25	28	35	38	46	53	57	59	78	29	33	39	43	50	50	50	63	23	27	32	35	41	41	41	51										
10	33	41	45	54	62	67	70	89	33	39	46	51	58	58	59	73	27	31	37	41	47	47	48	59											

Note:
 1. Width is dimension away from body in cm
 2. Distance is vertical lift in cm
 3. Percent pertains to industrial population
 4. Italicized values exceed 8 hr physiological criteria

Snook, S. H. and Ciriello, V. M., The design of manual handling tasks: revised tables of maximum acceptable weights and forces, *Ergonomics*, 34, 9, 1991

Didapatkan Lebar: 34 cm. Jarak: 29.6 cm (terletak diantara 51 cm dan 25 cm), Frekuensi Penurunannya: 8 jam sekali, dan Persentase populasi yang dapat melakukan pekerjaan tersebut tanpa mengalami kelelahan yang berarti sebesar 90%. Berikut ini merupakan hasil interpolasinya:

Interpolasi Akhir:

$$\frac{51 - 25}{51 - 29.6} = \frac{29 - 31}{29 - x}$$

$$26(29 - x) = 21.4(-2)$$

$$754 - 26x = -42.8$$

$$-26x = -42.8 - 754$$

$$x = \frac{796.8}{26} = 30.6462 \text{ kg}$$

17. Untuk Gerakan Menurunkan (*Lowering*) Kardus Potongan Kayu yang sudah diampelas menuju Lantai Gergaji kecil dan Drilling:

Maximum Acceptable Weight of Lower for Males (kg)

Width Distance Percent	Floor level to knuckle height One lift every								Knuckle height to shoulder height One lift every								Shoulder height to arm reach One lift every								Note: 1. Width is dimension away from body in cm 2. Distance is vertical lift in cm 3. Percent pertains to Industrial population 4. Italicized values exceed 8 hr physiological criteria
	s				min				s				min				s				min				
	5	9	14	1	2	5	30	8	5	9	14	1	2	5	30	8	5	9	14	1	2	5	30	8	
90	7	9	10	12	14	15	16	20	10	11	14	14	15	15	16	19	6	7	9	9	10	10	11	13	
75	10	13	14	18	20	22	22	29	13	16	18	18	21	21	21	26	9	10	12	12	14	14	14	18	
50	14	17	19	23	27	29	30	38	18	20	24	24	27	27	28	34	11	13	15	16	18	18	19	23	
25	17	21	24	29	33	36	37	47	21	25	29	29	34	34	34	42	14	16	19	20	23	23	23	28	
10	20	25	28	34	39	42	44	56	25	29	34	34	39	39	39	49	16	19	22	23	26	26	27	33	
90	8	10	11	13	15	16	17	21	11	12	14	15	17	17	18	22	7	8	9	10	12	12	12	15	
75	11	14	15	18	21	23	23	30	14	17	20	21	24	24	24	30	9	11	13	14	16	16	16	20	
50	14	18	20	24	28	30	31	40	19	21	25	27	31	31	31	38	12	14	16	18	21	21	21	26	
25	18	22	25	30	34	37	39	49	23	26	31	33	38	38	38	47	15	17	20	22	25	25	26	32	
10	21	26	29	36	41	44	46	58	27	31	36	38	44	44	44	55	17	20	24	26	30	30	30	37	
90	9	11	12	15	17	18	19	24	12	14	17	18	21	21	21	26	8	9	11	12	14	14	14	17	
75	13	16	17	21	24	25	26	34	17	20	23	24	28	28	28	35	11	13	15	16	19	19	19	24	
50	17	21	23	27	31	34	35	45	22	25	30	32	36	36	37	45	14	16	19	21	24	24	25	31	
25	21	25	29	34	39	42	44	56	29	31	37	39	44	44	45	56	17	20	24	26	30	30	30	38	
10	24	31	34	40	46	49	51	66	31	36	43	45	52	52	52	65	20	23	28	30	35	35	35	44	
90	8	10	11	15	17	18	19	24	10	11	14	14	15	15	16	19	7	8	10	11	12	12	12	15	
75	12	15	16	21	24	26	26	34	13	16	18	18	21	21	21	26	10	11	14	15	17	17	17	21	
50	15	19	21	29	31	34	35	45	18	20	24	24	27	27	28	34	13	15	17	19	22	22	22	27	
25	19	24	26	34	39	42	44	56	21	25	29	29	34	34	34	42	16	18	21	23	27	27	27	33	
10	25	28	31	40	46	49	51	65	25	29	34	34	39	39	39	49	18	21	25	27	31	31	31	39	
90	9	11	12	15	17	19	19	25	11	12	14	15	17	17	18	22	8	9	10	12	14	14	14	17	
75	12	15	17	22	25	26	28	35	14	17	20	21	24	24	24	30	10	12	14	16	19	19	19	24	
50	16	20	22	29	33	35	37	47	19	21	25	27	31	31	31	38	14	16	18	21	24	24	25	31	
25	20	25	27	36	41	44	46	58	23	26	31	33	38	38	38	47	17	19	23	26	30	30	30	37	
10	23	29	32	42	48	51	54	68	27	31	36	38	44	44	44	55	19	22	26	30	35	35	35	44	
90	10	13	14	17	20	21	22	28	12	14	17	18	21	21	21	26	9	10	12	14	16	16	16	20	
75	14	18	19	24	28	30	31	40	17	20	23	24	28	28	28	35	12	14	17	19	22	22	22	28	
50	19	24	26	32	37	40	41	54	22	25	30	32	36	36	37	45	16	18	22	25	29	29	29	36	
25	23	29	32	40	46	49	51	65	27	31	37	39	44	44	45	56	20	23	27	31	35	35	36	44	
10	29	34	38	47	54	58	60	77	31	36	43	45	52	52	52	65	23	26	31	36	41	41	41	52	
90	10	12	13	17	19	21	21	27	11	12	14	15	17	17	18	22	9	10	12	12	14	14	14	18	
75	14	17	19	24	27	29	30	39	14	17	20	21	24	24	24	30	12	13	16	17	19	19	19	24	
50	18	23	25	32	36	39	40	51	19	21	25	27	31	31	31	38	15	17	21	22	25	25	25	31	
25	23	29	31	39	45	48	50	64	23	26	31	33	38	38	38	47	19	21	25	27	31	31	31	38	
10	27	34	37	46	53	57	59	75	27	31	36	38	44	44	44	55	22	25	30	31	36	36	36	45	
90	10	13	14	17	20	22	22	29	11	13	15	17	20	20	20	24	9	10	12	14	16	16	16	20	
75	14	18	20	25	28	30	32	40	15	18	21	23	27	27	27	33	12	14	17	19	22	22	22	27	
50	19	24	26	33	37	40	42	53	20	23	27	30	35	35	35	43	16	19	22	24	28	28	28	35	
25	24	30	33	41	47	50	52	69	24	28	33	37	42	42	43	53	20	23	29	30	34	34	35	43	
10	28	36	38	48	55	59	62	78	28	33	39	43	49	49	50	62	23	27	31	35	40	40	40	50	
90	12	15	16	20	23	24	25	32	13	15	18	20	23	23	23	29	11	12	15	16	19	19	19	23	
75	17	21	23	28	32	34	35	45	18	21	25	27	31	31	32	39	15	17	20	22	26	26	26	32	
50	23	28	31	37	42	46	47	60	23	27	32	35	41	41	41	51	19	22	26	29	33	33	33	41	
25	28	35	38	46	53	57	59	78	29	33	39	43	50	50	50	63	23	27	32	35	41	41	41	51	
10	33	41	45	54	62	67	70	89	33	39	46	51	58	58	59	73	27	31	37	41	47	47	48	59	

Snook, S. H. and Ciriello, V. M., The design of manual handling tasks: revised tables of maximum acceptable weights and forces, *Ergonomics*, 34, 9, 1991

Didapatkan Lebar: 34 cm. Jarak: 40.2 cm (terletak diantara 51 cm dan 25 cm), Frekuensi Penurunannya: 4 jam sekali (terletak diantara 8 jam dan 30 menit), dan Persentase populasi yang dapat melakukan pekerjaan tersebut tanpa mengalami kelelahan yang berarti sebesar 89.6576% (Terletak diantara 75% dan 90%). Berikut ini merupakan hasil interpolasinya:

Untuk Jarak 51 cm, persentase 90%:

$$\frac{8 - 0.5}{8 - 4} = \frac{29 - 27}{29 - x}$$

$$7.5(29 - x) = 4(7)$$

$$213.5 - 7.5x = 28$$

$$-7.5x = 28 - 213.5$$

$$x = \frac{189.5}{7.5} = 25.2667 \text{ kg}$$

Untuk Jarak 51 cm, persentase 75%:

$$\frac{8 - 0.5}{8 - 4} = \frac{40 - 32}{40 - x}$$

$$7.5(40 - x) = 4(8)$$

$$300 - 7.5x = 32$$

$$-7.5x = 32 - 300$$

$$x = \frac{268}{7.5} = 35.7333 \text{ kg}$$

Untuk Jarak 25 cm, persentase 90%:

$$\frac{8 - 0.5}{8 - 4} = \frac{32 - 25}{32 - x}$$

$$7.5(32 - x) = 4(7)$$

$$240 - 7.5x = 28$$

$$-7.5x = 28 - 240$$

$$x = \frac{212}{7.5} = 28.2667 \text{ kg}$$

Untuk Jarak 25 cm, persentase 75%:

$$\frac{8 - 0.5}{8 - 4} = \frac{46 - 36}{46 - x}$$

$$7.5(46 - x) = 4(10)$$

$$345 - 7.5x = 40$$

$$-7.5x = 40 - 345$$

$$x = \frac{305}{7.5} = 40.6667 \text{ kg}$$

Untuk Jarak 51 cm:

$$\frac{90 - 75}{90 - 89.6576} = \frac{25.2667 - 35.3333}{25.2667 - x}$$

$$15(25.2667 - x) = 0.3424(-10.4666)$$

$$379.0005 - 15x = -3.5838$$

$$-15x = -3.5838 - 379.0005$$

$$x = \frac{382.5843}{15} = 25.5056 \text{ kg}$$

Untuk Jarak 25 cm:

$$\frac{90 - 75}{90 - 89.6576} = \frac{28.2667 - 40.3333}{28.2667 - x}$$

$$15(28.2667 - x) = 0.3424(-12.4)$$

$$424.0005 - 15x = -4.2458$$

$$-15x = -4.2458 - 424.0005$$

$$x = \frac{428.2463}{15} = 28.5498 \text{ kg}$$

Interpolasi Akhir:

$$\frac{51 - 25}{51 - 40.2} = \frac{25.5056 - 28.5498}{25.5056 - x}$$

$$26(25.5056 - x) = 10.8(-3.0442)$$

$$663.1456 - 26x = -32.8774$$

$$-26x = -32.8774 - 663.1456$$

$$x = \frac{696.023}{26} = 26.7701 \text{ kg}$$

18. Untuk Gerakan Menurunkan (*Lowering*) Kardus Potongan Kayu Hasil Gergaji Kecil dan Drilling menuju Lantai Gerinda:

Maximum Acceptable Weight of Lower for Males (kg)

Width Clearance Percent	Floor level to knuckle height One lift every								Knuckle height to shoulder height One lift every								Shoulder height to arm reach One lift every							
	5 s	9 s	14 s	1 min	2 min	5 min	30 min	8 h	5 s	9 s	14 s	1 min	2 min	5 min	30 min	8 h	5 s	9 s	14 s	1 min	2 min	5 min	30 min	8 h
90	7	9	10	12	14	15	16	20	10	11	14	14	15	15	16	19	6	7	9	9	10	10	11	13
75	10	13	14	18	20	22	22	29	13	16	18	18	21	21	21	26	9	10	12	12	14	14	14	18
50	14	17	19	23	27	29	30	38	18	20	24	24	27	27	28	34	11	13	15	16	18	18	19	23
25	17	21	24	29	33	36	37	47	21	25	29	29	34	34	34	42	14	16	19	20	23	23	23	28
10	20	25	28	34	39	42	44	56	25	29	34	34	39	39	39	49	16	19	22	23	26	26	27	33
90	8	10	11	13	15	16	17	21	11	12	14	15	17	17	18	22	7	8	9	10	12	12	12	15
75	11	14	15	18	21	23	23	30	14	17	20	21	24	24	24	30	9	11	13	14	16	16	16	20
50	14	18	20	24	28	30	31	40	19	21	25	27	31	31	31	38	12	14	16	18	21	21	21	26
25	18	22	25	30	34	37	39	49	23	26	31	33	38	38	38	47	15	17	20	22	25	25	26	32
10	21	26	29	36	41	44	46	58	27	31	36	38	44	44	44	55	17	20	24	26	30	30	30	37
90	9	11	12	15	17	18	19	24	12	14	17	18	21	21	21	26	8	9	11	12	14	14	14	17
75	13	16	17	21	24	25	26	34	17	20	23	24	28	28	28	35	11	13	15	16	19	19	19	24
50	17	21	23	27	31	34	35	45	22	25	30	32	36	36	37	45	14	16	19	21	24	24	25	31
25	21	25	29	34	39	42	44	56	29	31	37	39	44	44	45	56	17	20	24	26	30	30	30	38
10	24	31	34	40	46	49	51	66	31	36	43	45	52	52	52	65	20	23	28	30	35	35	35	44
90	8	10	11	15	17	18	19	24	10	11	14	14	15	15	16	19	7	8	10	11	12	12	12	15
75	12	15	16	21	24	26	26	34	13	16	18	18	21	21	21	26	10	11	14	15	17	17	17	21
50	15	19	21	29	31	34	35	45	18	20	24	24	27	27	28	34	13	15	17	19	22	22	22	27
25	19	24	26	34	39	42	44	56	21	25	29	29	34	34	34	42	16	18	21	23	27	27	27	33
10	25	28	31	40	46	49	51	65	25	29	34	34	39	39	39	49	18	21	25	27	31	31	31	39
90	9	11	12	15	17	19	19	25	11	12	14	15	17	17	18	22	8	9	10	12	14	14	14	17
75	12	15	17	22	25	26	28	36	14	17	20	21	24	24	24	30	10	12	14	16	19	19	19	24
50	15	20	22	29	33	35	37	47	19	21	25	27	31	31	31	38	14	16	18	21	24	24	25	31
25	20	25	27	36	41	44	46	58	23	26	31	33	38	38	38	47	17	19	23	26	30	30	30	37
10	23	29	32	42	48	51	54	68	27	31	36	38	44	44	44	55	19	22	26	30	35	35	35	44
90	10	13	14	17	20	21	22	28	12	14	17	18	21	21	21	26	9	10	12	14	16	16	16	20
75	14	18	19	24	28	30	31	40	17	20	23	24	28	28	28	35	12	14	17	19	22	22	22	28
50	19	24	26	32	37	40	41	54	22	25	30	32	36	36	37	45	16	18	22	25	29	29	29	36
25	23	29	32	40	46	49	51	65	27	31	37	39	44	44	45	56	20	23	27	31	35	35	36	44
10	29	34	38	47	54	58	60	77	31	36	43	45	52	52	52	65	23	26	31	36	41	41	41	52
90	10	12	13	17	19	21	21	27	11	12	14	15	17	17	18	22	9	10	12	12	14	14	14	18
75	14	17	19	24	27	29	30	39	14	17	20	21	24	24	24	30	12	13	16	17	19	19	19	24
50	18	23	25	32	36	39	40	51	19	21	25	27	31	31	31	38	15	17	21	22	25	25	25	31
25	23	29	31	39	45	48	50	64	23	26	31	33	38	38	38	47	19	21	25	27	31	31	31	38
10	27	34	37	46	53	57	59	75	27	31	36	38	44	44	44	55	22	25	30	31	36	36	36	45
90	10	13	14	17	20	22	22	29	11	13	15	17	20	20	20	24	9	10	12	14	16	16	16	20
75	14	18	20	25	28	30	32	40	15	18	21	23	27	27	27	33	12	14	17	19	22	22	22	27
50	19	24	26	33	37	40	42	53	20	23	27	30	35	35	35	43	16	19	22	24	28	28	28	35
25	24	30	33	41	47	50	52	69	24	28	33	37	42	42	43	53	20	23	29	30	34	34	35	43
10	28	35	38	48	55	59	62	78	28	33	39	43	49	49	50	62	23	27	31	35	40	40	40	50
90	12	15	16	20	23	24	25	32	13	15	18	20	23	23	23	29	11	12	15	16	19	19	19	23
75	17	21	23	28	32	34	36	45	18	21	25	27	31	31	32	39	15	17	20	22	26	26	26	32
50	23	28	31	37	42	46	47	60	23	27	32	36	41	41	41	51	19	22	26	29	33	33	33	41
25	28	35	38	46	53	57	59	76	29	33	39	43	50	50	50	63	23	27	32	35	41	41	41	51
10	33	41	45	54	62	67	70	89	33	39	46	51	58	58	59	73	27	31	37	41	47	47	48	59

Note:
 1. Width is dimension away from body in cm
 2. Distance is vertical lift in cm
 3. Percent pertains to industrial population
 4. Italicized values exceed 8 hr physiological criteria

Snook, S. H. and Ciriello, V. M., The design of manual handling tasks: revised tables of maximum acceptable weights and forces, *Ergonomics*, 34, 9, 1991

Didapatkan Lebar: 34 cm. Jarak: 32.7 cm (terletak diantara 51 cm dan 25 cm), Frekuensi Penurunannya: 4 jam sekali (terletak diantara 8 jam dan 30 menit), dan Persentase populasi yang dapat melakukan pekerjaan tersebut tanpa mengalami kelelahan yang berarti sebesar 89.9985% (Terletak diantara 75% dan 90%). Berikut ini merupakan hasil interpolasinya:

Untuk Jarak 51 cm, persentase 90%: 25.2667 kg

Untuk Jarak 51 cm, persentase 75%: 35.7333 kg

Untuk Jarak 25 cm, persentase 90%: 28.2667 kg

Untuk Jarak 25 cm, persentase 75%: 40.6667 kg

Untuk Jarak 51 cm:

$$\frac{90 - 75}{90 - 89.9985} = \frac{25.2667 - 35.3333}{25.2667 - x}$$

$$15(25.2667 - x) = 0.0015(-10.4666)$$

$$379.0005 - 15x = -0.0157$$

$$-15x = -0.0157 - 379.0005$$

$$x = \frac{379.0162}{15} = 25.2677 \text{ kg}$$

Untuk Jarak 25 cm:

$$\frac{90 - 75}{90 - 89.9985} = \frac{28.2667 - 40.3333}{28.2667 - x}$$

$$15(28.2667 - x) = 0.0015(-12.4)$$

$$424.0005 - 15x = -0.0186$$

$$-15x = -0.0186 - 424.0005$$

$$x = \frac{424.0191}{15} = 28.2679 \text{ kg}$$

Interpolasi Akhir:

$$\frac{51 - 25}{51 - 32.7} = \frac{25.2677 - 28.2679}{25.2677 - x}$$

$$26(25.2677 - x) = 18.3(-3.0002)$$

$$656.9602 - 26x = -54.9037$$

$$-26x = -54.9037 - 656.9602$$

$$x = \frac{711.8639}{26} = 27.3794 \text{ kg}$$

19. Untuk Gerakan Menurunkan (*Lowering*) Kardus Potongan Kayu yang sudah digerinda menuju Lantai Stasiun Pola:

Maximum Acceptable Weight of Lower for Males (kg)

Width Clearance Percent	Floor level to knuckle height One lift every								Knuckle height to shoulder height One lift every								Shoulder height to arm reach One lift every														
	s				min				s				min				s				min				h						
	5	9	14	1	2	5	30	8	5	9	14	1	2	5	30	8	5	9	14	1	2	5	30	8	5	9	14	1	2	5	30
90	7	9	10	12	14	15	16	20	10	11	14	14	15	15	16	19	6	7	9	9	10	10	11	13	<p>Note:</p> <p>1. Width is dimension away from body in cm</p> <p>2. Distance is vertical lift in cm</p> <p>3. Percent pertains to industrial population</p> <p>4. Italicized values exceed 8 hr physiological criteria</p>						
75	10	13	14	18	20	22	22	29	13	16	18	18	21	21	21	26	9	10	12	12	14	14	14	18							
50	14	17	19	23	27	29	30	38	18	20	24	24	27	27	28	34	11	13	15	16	18	18	19	23							
25	17	21	24	29	33	36	37	47	21	25	29	29	34	34	34	42	14	16	19	20	23	23	23	28							
10	20	25	28	34	39	42	44	56	25	29	34	34	39	39	39	49	16	19	22	23	26	26	27	33							
75	90	8	10	11	13	15	16	17	21	11	12	14	15	17	17	18	22	7	8	9	10	12	12	12		15					
	75	11	14	15	18	21	23	23	30	14	17	20	21	24	24	30	9	11	13	14	16	16	16	20							
	50	14	18	20	24	28	30	31	40	19	21	25	27	31	31	38	12	14	16	18	21	21	21	26							
	25	18	22	25	30	34	37	39	49	23	26	31	33	38	38	47	15	17	20	22	25	25	26	32							
	10	21	26	29	36	41	44	46	58	27	31	36	38	44	44	55	17	20	24	26	30	30	30	37							
25	90	9	11	12	15	17	18	19	24	12	14	17	18	21	21	26	8	9	11	12	14	14	14	17							
	75	13	16	17	21	24	25	26	34	17	20	23	24	28	28	35	11	13	15	16	19	19	19	24							
	50	17	21	23	27	31	34	35	45	22	25	30	32	36	36	45	14	16	19	21	24	24	25	31							
	25	21	25	29	34	39	42	44	56	29	31	37	39	44	44	56	17	20	24	26	30	30	30	38							
	10	24	31	34	40	46	49	51	66	31	36	43	45	52	52	65	20	23	28	30	35	35	35	44							
76	90	8	10	11	15	17	18	19	24	10	11	14	14	15	15	16	19	7	8	10	11	12	12	12		15					
	75	12	15	16	21	24	26	26	34	13	16	18	18	21	21	26	10	11	14	15	17	17	17	21							
	50	15	19	21	29	31	34	35	45	18	20	24	24	27	27	34	13	15	17	19	22	22	22	27							
	25	19	24	26	34	39	42	44	56	21	25	29	29	34	34	42	16	18	21	23	27	27	27	33							
	10	25	28	31	40	46	49	51	65	25	29	34	34	39	39	49	18	21	25	27	31	31	31	39							
49	90	9	11	12	15	17	19	19	25	11	12	14	15	17	17	18	22	8	9	10	12	14	14	14	17						
	75	12	15	17	22	25	26	28	36	14	17	20	21	24	24	30	10	12	14	16	19	19	19	24							
	50	15	20	22	29	33	35	37	47	19	21	25	27	31	31	38	14	16	18	21	24	24	25	31							
	25	20	25	27	36	41	44	46	58	23	26	31	33	38	38	47	17	19	23	26	30	30	30	37							
	10	23	29	32	42	48	51	54	68	27	31	36	38	44	44	55	19	22	26	30	35	35	35	44							
25	90	10	13	14	17	20	21	22	28	12	14	17	18	21	21	26	9	10	12	14	16	16	16	20							
	75	14	18	19	24	28	30	31	40	17	20	23	24	28	28	35	12	14	17	19	22	22	22	28							
	50	19	24	26	32	37	40	41	54	22	25	30	32	36	36	45	16	18	22	25	29	29	29	36							
	25	23	29	32	40	46	49	51	65	27	31	37	39	44	44	56	20	23	27	31	35	35	36	44							
	10	29	34	38	47	54	58	60	77	31	36	43	45	52	52	65	23	26	31	36	41	41	41	52							
76	90	10	12	13	17	19	21	21	27	11	12	14	15	17	17	18	22	9	10	12	12	14	14	18							
	75	14	17	19	24	27	29	30	39	14	17	20	21	24	24	30	12	13	16	17	19	19	19	24							
	50	18	23	25	32	36	39	40	51	19	21	25	27	31	31	38	15	17	21	22	25	25	25	31							
	25	23	29	31	39	45	48	50	64	23	26	31	33	38	38	47	19	21	25	27	31	31	31	38							
	10	27	34	37	46	53	57	59	75	27	31	36	38	44	44	55	22	25	30	31	36	36	36	45							
34	90	10	13	14	17	20	22	22	29	11	13	15	17	20	20	24	9	10	12	14	16	16	16	20							
	75	14	18	20	25	28	30	32	40	15	18	21	23	27	27	33	12	14	17	19	22	22	22	27							
	50	19	24	26	33	37	40	42	53	20	23	27	30	35	35	43	16	19	22	24	28	28	28	35							
	25	24	30	33	41	47	50	52	69	24	28	33	37	42	42	53	20	23	29	30	34	34	35	43							
	10	28	35	38	48	55	59	62	78	28	33	39	43	49	49	62	23	27	31	35	40	40	40	50							
25	90	12	15	16	20	23	24	25	32	13	15	18	20	23	23	29	11	12	15	16	19	19	19	23							
	75	17	21	23	28	32	34	36	46	18	21	25	27	31	31	39	15	17	20	22	26	26	26	32							
	50	23	28	31	37	42	46	47	60	23	27	32	36	41	41	51	19	22	26	29	33	33	33	41							
	25	28	35	38	46	53	57	59	78	29	33	39	43	50	50	63	23	27	32	35	41	41	41	51							
	10	33	41	45	54	62	67	70	89	33	39	46	51	58	58	73	27	31	37	41	47	47	48	59							

Snook, S. H. and Ciriello, V. M., The design of manual handling tasks: revised tables of maximum acceptable weights and forces, *Ergonomics*, 34, 9, 1991

Didapatkan Lebar: 34 cm. Jarak: 34.7 cm (terletak diantara 51 cm dan 25 cm), Frekuensi Penurunannya: 4 jam sekali (terletak diantara 8 jam dan 30 menit), dan Persentase populasi yang dapat melakukan pekerjaan tersebut tanpa mengalami kelelahan yang berarti sebesar 89.7307% (Terletak diantara 75% dan 90%). Berikut ini merupakan hasil interpolasinya:

Untuk Jarak 51 cm, persentase 90%: 25.2667 kg

Untuk Jarak 51 cm, persentase 75%: 35.7333 kg

Untuk Jarak 25 cm, persentase 90%: 28.2667 kg

Untuk Jarak 25 cm, persentase 75%: 40.6667 kg

Untuk Jarak 51 cm:

$$\frac{90 - 75}{90 - 89.7307} = \frac{25.2667 - 35.3333}{25.2667 - x}$$

$$15(25.2667 - x) = 0.2693(-10.4666)$$

$$379.0005 - 15x = -2.8187$$

$$-15x = -2.8187 - 379.0005$$

$$x = \frac{381.8192}{15} = 25.4546 \text{ kg}$$

Untuk Jarak 25 cm:

$$\frac{90 - 75}{90 - 89.7307} = \frac{28.2667 - 40.3333}{28.2667 - x}$$

$$15(28.2667 - x) = 0.2693(-12.4)$$

$$424.0005 - 15x = -3.3393$$

$$-15x = -3.3393 - 424.0005$$

$$x = \frac{427.3398}{15} = 28.4893 \text{ kg}$$

Interpolasi Akhir:

$$\frac{51 - 25}{51 - 34.7} = \frac{25.4546 - 28.4893}{25.4546 - x}$$

$$26(25.4546 - x) = 16.3(-3.0347)$$

$$661.8196 - 26x = -49.4656$$

$$-26x = -49.4656 - 661.8196$$

$$x = \frac{711.2852}{26} = 27.3571 \text{ kg}$$

20. Untuk Gerakan Menurunkan (*Lowering*) Kardus Potongan Kayu yang sudah digerinda menuju Lantai Stasiun Press:

Maximum Acceptable Weight of Lower for Males (kg)

Width Clearance Percent	Floor level to knuckle height One lift every								Knuckle height to shoulder height One lift every								Shoulder height to arm reach One lift every											
	5				14				1				2				5				30				8			
	s	s	s	s	min	min	min	min	min	min	min	min	min	min	min	min	min	min	min	min	h	h	h	h	h	h	h	h
90	7	9	10	12	14	15	16	20	10	11	14	14	15	15	16	19	6	7	9	9	10	10	11	13				
75	10	13	14	18	20	22	22	29	13	16	18	18	21	21	21	26	9	10	12	12	14	14	14	18				
50	14	17	19	23	27	29	30	38	18	20	24	24	27	27	28	34	11	13	15	16	18	18	19	23				
25	17	21	24	29	33	36	37	47	21	25	29	29	34	34	34	42	14	16	19	20	23	23	23	28				
10	20	25	28	34	39	42	44	56	25	29	34	34	39	39	39	49	16	19	22	23	26	26	27	33				
75	90	8	10	11	13	15	16	17	21	11	12	14	15	17	17	18	22	7	8	9	10	12	12	12	15			
	75	11	14	15	18	21	23	23	30	14	17	20	21	24	24	30	9	11	13	14	16	16	16	20				
	50	14	18	20	24	28	30	31	40	19	21	25	27	31	31	38	12	14	16	18	21	21	21	26				
	25	18	22	25	30	34	37	39	49	23	26	31	33	38	38	47	15	17	20	22	25	25	26	32				
10	21	26	29	36	41	44	46	58	27	31	36	38	44	44	55	17	20	24	26	30	30	30	37					
25	90	9	11	12	15	17	18	19	24	12	14	17	18	21	21	26	8	9	11	12	14	14	14	17				
	75	13	16	17	21	24	25	26	34	17	20	23	24	28	28	35	11	13	15	16	19	19	19	24				
	50	17	21	23	27	31	34	35	45	22	25	30	32	36	36	45	14	16	19	21	24	24	25	31				
	25	21	25	29	34	39	42	44	56	29	31	37	39	44	44	56	17	20	24	26	30	30	30	38				
10	24	31	34	40	46	49	51	66	31	36	43	45	52	52	65	20	23	28	30	35	35	35	44					
76	90	8	10	11	15	17	18	19	24	10	11	14	14	15	15	19	7	8	10	11	12	12	12	15				
	75	12	15	16	21	24	26	26	34	13	16	18	18	21	21	26	10	11	14	15	17	17	17	21				
	50	15	19	21	29	31	34	35	45	18	20	24	24	27	27	34	13	15	17	19	22	22	22	27				
	25	19	24	26	34	39	42	44	56	21	25	29	29	34	34	42	16	18	21	23	27	27	27	33				
10	25	28	31	40	46	49	51	65	25	29	34	34	39	39	49	18	21	25	27	31	31	31	39					
49	90	9	11	12	15	17	19	19	25	11	12	14	15	17	17	18	22	8	9	10	12	14	14	17				
	75	12	15	17	22	25	26	28	36	14	17	20	21	24	24	30	10	12	14	16	19	19	19	24				
	50	15	20	22	29	33	35	37	47	19	21	25	27	31	31	38	14	16	18	21	24	24	25	31				
	25	20	25	27	36	41	44	46	58	23	26	31	33	38	38	47	17	19	23	26	30	30	30	37				
10	23	29	32	42	48	51	54	68	27	31	36	38	44	44	55	19	22	26	30	35	35	35	44					
25	90	10	13	14	17	20	21	22	28	12	14	17	18	21	21	26	9	10	12	14	16	16	16	20				
	75	14	18	19	24	28	30	31	40	17	20	23	24	28	28	35	12	14	17	19	22	22	22	28				
	50	19	24	26	32	37	40	41	54	22	25	30	32	36	36	45	16	18	22	25	29	29	29	36				
	25	23	29	32	40	46	49	51	65	27	31	37	39	44	44	56	20	23	27	31	35	35	36	44				
10	29	34	38	47	54	58	60	77	31	36	43	45	52	52	65	23	26	31	36	41	41	41	52					
76	90	10	12	13	17	19	21	21	27	11	12	14	15	17	17	18	22	9	10	12	12	14	14	18				
	75	14	17	19	24	27	29	30	39	14	17	20	21	24	24	30	12	13	16	17	19	19	19	24				
	50	18	23	25	32	36	39	40	51	19	21	25	27	31	31	38	15	17	21	22	25	25	25	31				
	25	23	29	31	39	45	48	50	64	23	26	31	33	38	38	47	19	21	25	27	31	31	31	38				
10	27	34	37	46	53	57	59	75	27	31	36	38	44	44	55	22	25	30	31	36	36	36	45					
25	90	10	13	14	17	20	22	22	29	11	13	15	17	20	20	24	9	10	12	14	16	16	16	20				
	75	14	18	20	25	28	30	32	40	15	18	21	23	27	27	33	12	14	17	19	22	22	22	27				
	50	19	24	26	33	37	40	42	53	20	23	27	30	35	35	43	16	19	22	24	28	28	28	35				
	25	24	30	33	41	47	50	52	69	24	28	33	37	42	42	53	20	23	29	30	34	34	35	43				
10	28	35	38	48	55	59	62	78	28	33	39	43	49	49	62	23	27	31	35	40	40	40	50					
25	90	12	15	16	20	23	24	25	32	13	15	18	20	23	23	29	11	12	15	16	19	19	19	23				
	75	17	21	23	28	32	34	36	46	18	21	25	27	31	31	32	39	15	17	20	22	26	26	32				
	50	23	28	31	37	42	46	47	60	23	27	32	36	41	41	51	19	22	26	29	33	33	33	41				
	25	28	35	38	46	53	57	59	78	29	33	39	43	50	50	63	23	27	32	35	41	41	41	51				
10	33	41	45	54	62	67	70	89	33	39	46	51	58	58	73	27	31	37	41	47	47	48	59					

Note:
1. Width is dimension away from body in cm
2. Distance is vertical lift in cm
3. Percent pertains to industrial population
4. Italicized values exceed 8 hr physiological criteria

Snook, S. H. and Ciriello, V. M., The design of manual handling tasks: revised tables of maximum acceptable weights and forces, *Ergonomics*, 34, 9, 1991

Didapatkan Lebar: 34 cm. Jarak: 31.3 cm (terletak diantara 51 cm dan 25 cm), Frekuensi Penurunannya: 4 jam sekali (terletak diantara 8 jam dan 30 menit), dan Persentase populasi yang dapat melakukan pekerjaan tersebut tanpa mengalami kelelahan yang berarti sebesar 89.8622% (Terletak diantara 75% dan 90%). Berikut ini merupakan hasil interpolasinya:

Untuk Jarak 51 cm, persentase 90%: 25.2667 kg

Untuk Jarak 51 cm, persentase 75%: 35.7333 kg

Untuk Jarak 25 cm, persentase 90%: 28.2667 kg

Untuk Jarak 25 cm, persentase 75%: 40.6667 kg

Untuk Jarak 51 cm:

$$\frac{90 - 75}{90 - 89.8622} = \frac{25.2667 - 35.3333}{25.2667 - x}$$

$$15(25.2667 - x) = 0.1378(-10.4666)$$

$$379.0005 - 15x = -1.4423$$

$$-15x = -1.4423 - 379.0005$$

$$x = \frac{380.4428}{15} = 25.3629 \text{ kg}$$

Untuk Jarak 25 cm:

$$\frac{90 - 75}{90 - 89.8622} = \frac{28.2667 - 40.3333}{28.2667 - x}$$

$$15(28.2667 - x) = 0.1378(-12.4)$$

$$424.0005 - 15x = -1.7087$$

$$-15x = -1.7087 - 424.0005$$

$$x = \frac{425.7092}{15} = 28.3806 \text{ kg}$$

Interpolasi Akhir:

$$\frac{51 - 25}{51 - 31.3} = \frac{25.3629 - 28.3806}{25.3629 - x}$$

$$26(25.3629 - x) = 19.7(-3.0177)$$

$$659.4354 - 26x = -59.4487$$

$$-26x = -59.4487 - 659.4354$$

$$x = \frac{718.8841}{26} = 27.6494 \text{ kg}$$

21. Untuk Gerakan Menurunkan (*Lowering*) Kardus Produk Mainan Pola menuju Lantai Stasiun Cat Semprot:

Maximum Acceptable Weight of Lower for Males (kg)

Width Clearance Percent	Floor level to knuckle height One lift every								Knuckle height to shoulder height One lift every								Shoulder height to arm reach One lift every																			
	5				14				30				5				14				30				5				14				30			
	s				min				h				s				min				h				s				min				h			
90	7	9	10	12	14	15	16	20	10	11	14	14	15	15	16	19	6	7	9	9	10	10	11	13												
75	10	13	14	18	20	22	22	29	13	16	18	18	21	21	21	26	9	10	12	12	14	14	14	18												
50	14	17	19	23	27	29	30	38	18	20	24	24	27	27	28	34	11	13	15	16	18	18	19	23												
25	17	21	24	29	33	36	37	47	21	25	29	29	34	34	34	42	14	16	19	20	23	23	23	28												
10	20	25	28	34	39	42	44	56	25	29	34	34	39	39	39	49	16	19	22	23	26	26	27	33												
75	90	8	10	11	13	15	16	17	21	11	12	14	15	17	17	18	22	7	8	9	10	12	12	12	15											
	75	11	14	15	18	21	23	23	30	14	17	20	21	24	24	24	30	9	11	13	14	16	16	16	20											
	50	14	18	20	24	28	30	31	40	19	21	25	27	31	31	31	38	12	14	16	18	21	21	21	26											
	25	18	22	25	30	34	37	39	49	23	26	31	33	38	38	38	47	15	17	20	22	25	25	26	32											
25	90	9	11	12	15	17	18	19	24	12	14	17	18	21	21	21	26	8	9	11	12	14	14	14	17											
	75	13	16	17	21	24	25	26	34	17	20	23	24	28	28	28	35	11	13	15	16	19	19	19	24											
	50	17	21	23	27	31	34	36	45	22	25	30	32	36	36	37	45	14	16	19	21	24	24	25	31											
	25	21	25	29	34	39	42	44	56	29	31	37	39	44	44	45	56	17	20	24	26	30	30	30	38											
49	90	8	10	11	15	17	18	19	24	10	11	14	14	15	15	16	19	7	8	10	11	12	12	12	15											
	75	12	15	16	21	24	26	26	34	13	16	18	18	21	21	21	26	10	11	14	15	17	17	17	21											
	50	15	19	21	29	31	34	35	45	18	20	24	24	27	27	28	34	13	15	17	19	22	22	22	27											
	25	19	24	26	34	39	42	44	56	21	25	29	29	34	34	34	42	16	18	21	23	27	27	27	33											
75	90	9	11	12	15	17	19	19	25	11	12	14	15	17	17	18	22	8	9	10	12	14	14	14	17											
	75	12	15	17	22	25	26	28	36	14	17	20	21	24	24	24	30	10	12	14	16	19	19	19	24											
	50	15	20	22	29	33	35	37	47	19	21	25	27	31	31	31	38	14	16	18	21	24	24	25	31											
	25	20	25	27	36	41	44	46	58	23	26	31	33	38	38	38	47	17	19	23	26	30	30	30	37											
25	90	10	13	14	17	20	21	22	28	12	14	17	18	21	21	21	26	9	10	12	14	16	16	16	20											
	75	14	18	19	24	28	30	31	40	17	20	23	24	28	28	28	35	12	14	17	19	22	22	22	28											
	50	19	24	26	32	37	40	41	54	22	25	30	32	36	36	37	45	16	18	22	25	29	29	29	36											
	25	23	29	32	40	46	49	51	65	27	31	37	39	44	44	45	56	20	23	27	31	35	35	36	44											
75	90	10	12	13	17	19	21	21	27	11	12	14	15	17	17	18	22	9	10	12	12	14	14	14	18											
	75	14	17	19	24	27	29	30	39	14	17	20	21	24	24	24	30	12	13	16	17	19	19	19	24											
	50	18	23	25	32	36	39	40	51	19	21	25	27	31	31	31	38	15	17	21	22	25	25	25	31											
	25	23	29	31	39	45	48	50	64	23	26	31	33	38	38	38	47	19	21	25	27	31	31	31	38											
25	90	10	13	14	17	20	22	22	29	11	13	15	17	20	20	20	24	9	10	12	14	16	16	16	20											
	75	14	18	20	25	28	30	32	40	15	18	21	23	27	27	27	33	12	14	17	19	22	22	22	27											
	50	19	24	26	33	37	40	42	53	20	23	27	30	35	35	35	43	16	19	22	24	28	28	28	35											
	25	24	30	33	41	47	50	52	69	24	28	33	37	42	42	43	53	20	23	29	30	34	34	35	43											
25	90	12	15	16	20	23	24	25	32	13	15	18	20	23	23	23	29	11	12	15	16	19	19	19	23											
	75	17	21	23	28	32	34	36	45	18	21	25	27	31	31	32	39	15	17	20	22	26	26	26	32											
	50	23	28	31	37	42	46	47	60	23	27	32	35	41	41	41	51	19	22	26	29	33	33	33	41											
	25	28	35	38	46	53	57	59	78	29	33	39	43	50	50	50	63	23	27	32	35	41	41	41	51											
10	33	41	45	54	62	67	70	89	33	39	46	51	58	58	59	73	27	31	37	41	47	47	48	59												

Note:
 1. Width is dimension away from body in cm
 2. Distance is vertical lift in cm
 3. Percent pertains to industrial population
 4. Italicized values exceed 8 hr physiological criteria

Snook, S. H. and Ciriello, V. M., The design of manual handling tasks: revised tables of maximum acceptable weights and forces, *Ergonomics*, 34, 9, 1991

Didapatkan Lebar: 34 cm. Jarak: 49.7 cm (terletak diantara 51 cm dan 25 cm), Frekuensi Penurunannya: 8 jam sekali, dan Persentase populasi yang dapat melakukan pekerjaan tersebut tanpa mengalami kelelahan yang berarti sebesar 89.2812% (Terletak diantara 75% dan 90%). Berikut ini merupakan hasil interpolasinya:

Untuk Jarak 51 cm:

$$\frac{90 - 75}{90 - 89.2812} = \frac{29 - 40}{29 - x}$$

$$15(29 - x) = 0.7188(-11)$$

$$435 - 15x = -7.9068$$

$$-15x = -7.9068 - 435$$

$$x = \frac{442.9068}{15} = 29.5271 \text{ kg}$$

Untuk Jarak 25 cm:

$$\frac{90 - 75}{90 - 89.2812} = \frac{32 - 46}{32 - x}$$

$$15(32 - x) = 0.7188(-14)$$

$$480 - 15x = -10.0632$$

$$-15x = -10.0632 - 480$$

$$x = \frac{490.0632}{15} = 32.6709 \text{ kg}$$

Interpolasi Akhir:

$$\frac{51 - 25}{51 - 49.7} = \frac{29.5271 - 32.6709}{29.5271 - x}$$

$$26(29.5271 - x) = 1.3(-3.1438)$$

$$767.7046 - 26x = -4.0869$$

$$-26x = -4.0869 - 767.7046$$

$$x = \frac{771.7915}{26} = 29.6843 \text{ kg}$$

22. Untuk Gerakan Menurunkan (*Lowering*) Kardus Produk Mainan Puzzle menuju Lantai Stasiun Cat Kuas:

Maximum Acceptable Weight of Lower for Males (kg)

Width Clearance Percent	Floor level to knuckle height One lift every									Knuckle height to shoulder height One lift every									Shoulder height to arm reach One lift every																																					
	5			9			14			20			25			30			35			40			45			50			55			60			65																			
	s			min			min			h			s			min			min			h			s			min			min			h			s			min			min			h										
90	7	9	10	12	14	15	16	20	10	11	14	14	15	15	16	19	6	7	9	9	10	10	11	13	10	11	14	14	15	15	16	19	6	7	9	9	10	10	11	13	6	7	9	9	10	10	11	13								
75	10	13	14	18	20	22	22	29	13	16	18	18	21	21	21	26	9	10	12	12	14	14	14	18	10	13	14	18	20	22	22	29	13	16	18	18	21	21	21	26	9	10	12	12	14	14	14	18	9	10	12	12	14	14	14	18
50	14	17	19	23	27	29	30	38	18	20	24	24	27	27	28	34	11	13	15	16	18	18	19	23	14	17	19	23	27	29	30	38	18	20	24	24	27	27	28	34	11	13	15	16	18	18	19	23	11	13	15	16	18	18	19	23
25	17	21	24	29	33	36	37	47	21	25	29	29	34	34	34	42	14	16	19	20	23	23	23	28	17	21	24	29	33	36	37	47	21	25	29	29	34	34	42	14	16	19	20	23	23	23	28	14	16	19	20	23	23	23	28	
10	20	25	28	34	39	42	44	56	25	29	34	34	39	39	49	16	19	22	23	26	26	27	33	20	25	28	34	39	42	44	56	25	29	34	34	39	39	49	16	19	22	23	26	26	27	33	16	19	22	23	26	26	27	33		

Note:
1. Width is dimension away from body in cm
2. Distance is vertical lift in cm
3. Percent pertains to industrial population
4. Italicized values exceed 8 hr physiological criteria

Didapatkan Lebar: 34 cm. Jarak: 34.2 cm (terletak diantara 51 cm dan 25 cm), Frekuensi Penurunannya: 8 jam sekali, dan Persentase populasi yang dapat melakukan pekerjaan tersebut tanpa mengalami kelelahan yang berarti sebesar 89.8982% (Terletak diantara 75% dan 90%). Berikut ini merupakan hasil interpolasinya:

Untuk Jarak 51 cm:

$$\frac{90 - 75}{90 - 89.8982} = \frac{29 - 40}{29 - x}$$

$$15(29 - x) = 0.1018(-11)$$

$$435 - 15x = -1.1198$$

$$-15x = -1.1198 - 435$$

$$x = \frac{436.1198}{15} = 29.0747 \text{ kg}$$

Untuk Jarak 25 cm:

$$\frac{90 - 75}{90 - 89.8982} = \frac{32 - 46}{32 - x}$$

$$15(32 - x) = 0.1018(-14)$$

$$480 - 15x = -1.4252$$

$$-15x = -1.4252 - 480$$

$$x = \frac{481.4252}{15} = 32.095 \text{ kg}$$

Interpolasi Akhir:

$$\frac{51 - 25}{51 - 34.2} = \frac{29.0747 - 32.095}{29.0747 - x}$$

$$26(29.0747 - x) = 16.8(-3.0203)$$

$$755.9422 - 26x = -50.741$$

$$-26x = -50.741 - 755.9422$$

$$x = \frac{806.6832}{26} = 31.0263 \text{ kg}$$

23. Untuk Gerakan Menurunkan (*Lowering*) Kardus Mainan Pola yang sudah di cat semprot menuju Lantai Stasiun Packaging:

Maximum Acceptable Weight of Lower for Males (kg)

Width Clearance Percent	Floor level to knuckle height One lift every								Knuckle height to shoulder height One lift every								Shoulder height to arm reach One lift every								Note: 1. Width is dimension away from body in cm 2. Distance is vertical lift in cm 3. Percent pertains to industrial population 4. Italicized values exceed 8 hr physiological criteria						
	5				14				1				2				5				30					8					
	s	s	s	s	min	min	min	min	min	min	min	min	min	min	min	min	h	h	h	h	s	s	s	s		min	min	min	min	h	h
90	7	9	10	12	14	15	16	20	10	11	14	14	15	15	16	19	6	7	9	9	10	10	11	13							
75	10	13	14	18	20	22	22	29	13	16	18	18	21	21	21	26	9	10	12	12	14	14	14	18							
50	14	17	19	23	27	29	30	38	18	20	24	24	27	27	28	34	11	13	15	16	18	18	19	23							
25	17	21	24	29	33	36	37	47	21	25	29	29	34	34	34	42	14	16	19	20	23	23	23	28							
10	20	25	28	34	39	42	44	56	25	29	34	34	39	39	39	49	16	19	22	23	26	26	27	33							
90	8	10	11	13	15	16	17	21	11	12	14	15	17	17	18	22	7	8	9	10	12	12	12	15							
75	11	14	15	18	21	23	23	30	14	17	20	21	24	24	24	30	9	11	13	14	16	16	16	20							
50	14	18	20	24	28	30	31	40	19	21	25	27	31	31	31	38	12	14	16	18	21	21	21	26							
25	18	22	25	30	34	37	39	49	23	26	31	33	38	38	38	47	15	17	20	22	25	25	26	32							
10	21	26	29	36	41	44	46	58	27	31	36	38	44	44	44	55	17	20	24	26	30	30	30	37							
90	9	11	12	15	17	18	19	24	12	14	17	18	21	21	21	26	8	9	11	12	14	14	14	17							
75	13	16	17	21	24	25	26	34	17	20	23	24	28	28	28	35	11	13	15	16	19	19	19	24							
50	17	21	23	27	31	34	35	45	22	25	30	32	36	36	37	45	14	16	19	21	24	24	25	31							
25	21	25	29	34	39	42	44	56	29	31	37	39	44	44	45	56	17	20	24	26	30	30	30	38							
10	24	31	34	40	46	49	51	66	31	36	43	45	52	52	52	65	20	23	28	30	35	35	35	44							
90	8	10	11	15	17	18	19	24	10	11	14	14	15	15	16	19	7	8	10	11	12	12	12	15							
75	12	15	16	21	24	26	26	34	13	16	18	18	21	21	21	26	10	11	14	15	17	17	17	21							
50	15	19	21	29	31	34	35	45	18	20	24	24	27	27	28	34	13	15	17	19	22	22	22	27							
25	19	24	26	34	39	42	44	56	21	25	29	29	34	34	34	42	16	18	21	23	27	27	27	33							
10	25	28	31	40	46	49	51	65	25	29	34	34	39	39	39	49	18	21	25	27	31	31	31	39							
90	9	11	12	15	17	19	19	25	11	12	14	15	17	17	18	22	8	9	10	12	14	14	14	17							
75	12	15	17	22	25	26	28	36	14	17	20	21	24	24	24	30	10	12	14	16	19	19	19	24							
50	15	20	22	29	33	35	37	47	19	21	25	27	31	31	31	38	14	16	18	21	24	24	25	31							
25	20	25	27	36	41	44	46	58	23	26	31	33	38	38	38	47	17	19	23	26	30	30	30	37							
10	23	29	32	42	48	51	54	68	27	31	36	38	44	44	44	55	19	22	26	30	35	35	35	44							
90	10	13	14	17	20	21	22	28	12	14	17	18	21	21	21	26	9	10	12	14	16	16	16	20							
75	14	18	19	24	28	30	31	40	17	20	23	24	28	28	28	35	12	14	17	19	22	22	22	28							
50	19	24	26	32	37	40	41	54	22	25	30	32	36	36	37	45	16	18	22	25	29	29	29	36							
25	23	29	32	40	46	49	51	65	27	31	37	39	44	44	45	56	20	23	27	31	35	35	36	44							
10	29	34	38	47	54	58	60	77	31	36	43	45	52	52	52	65	23	26	31	36	41	41	41	52							
90	10	12	13	17	19	21	21	27	11	12	14	15	17	17	18	22	9	10	12	12	14	14	14	18							
75	14	17	19	24	27	29	30	39	14	17	20	21	24	24	24	30	12	13	16	17	19	19	19	24							
50	18	23	25	32	36	39	40	51	19	21	25	27	31	31	31	38	15	17	21	22	25	25	25	31							
25	23	29	31	39	45	48	50	64	23	26	31	33	38	38	38	47	19	21	25	27	31	31	31	38							
10	27	34	37	46	53	57	59	75	27	31	36	38	44	44	44	55	22	25	30	31	36	36	36	45							
90	10	13	14	17	20	22	22	29	11	13	15	17	20	20	20	24	9	10	12	14	16	16	16	20							
75	14	18	20	25	28	30	32	40	15	18	21	23	27	27	27	33	12	14	17	19	22	22	22	27							
50	19	24	26	33	37	40	42	53	20	23	27	30	35	35	35	43	16	19	22	24	28	28	28	35							
25	24	30	33	41	47	50	52	69	24	28	33	37	42	42	43	53	20	23	29	30	34	34	35	43							
10	28	35	38	48	55	59	62	78	28	33	39	43	49	49	50	62	23	27	31	35	40	40	40	50							
90	12	15	16	20	23	24	25	32	13	15	18	20	23	23	23	29	11	12	15	16	19	19	19	23							
75	17	21	23	28	32	34	36	46	18	21	25	27	31	31	32	39	15	17	20	22	26	26	26	32							
50	23	28	31	37	42	46	47	60	23	27	32	36	41	41	41	51	19	22	26	29	33	33	33	41							
25	28	35	38	46	53	57	59	76	29	33	39	43	50	50	50	63	23	27	32	35	41	41	41	51							
10	33	41	45	54	62	67	70	89	33	39	46	51	58	58	59	73	27	31	37	41	47	47	48	59							

Snook, S. H. and Ciriello, V. M., The design of manual handling tasks: revised tables of maximum acceptable weights and forces, Ergonomics, 34, 9, 1991

Didapatkan Lebar: 34 cm. Jarak: 29.6 cm (terletak diantara 51 cm dan 25 cm), Frekuensi Penurunannya: 4 jam sekali (terletak diantara 8 jam dan 30 menit), dan Persentase populasi yang dapat melakukan pekerjaan tersebut tanpa mengalami kelelahan yang berarti sebesar 89.888% (Terletak diantara 75% dan 90%). Berikut ini merupakan hasil interpolasinya:

Untuk Jarak 51 cm, persentase 90%: **25.2667 kg**

Untuk Jarak 51 cm, persentase 75%: **35.7333 kg**

Untuk Jarak 25 cm, persentase 90%: **28.2667 kg**

Untuk Jarak 25 cm, persentase 75%: **40.6667 kg**

Untuk Jarak 51 cm:

$$\frac{90 - 75}{90 - 89.888} = \frac{25.2667 - 35.3333}{25.2667 - x}$$

$$15(25.2667 - x) = 0.112(-10.4666)$$

$$379.0005 - 15x = -1.1723$$

$$-15x = -1.1723 - 379.0005$$

$$x = \frac{380.1728}{15} = 25.3449 \text{ kg}$$

Untuk Jarak 25 cm:

$$\frac{90 - 75}{90 - 89.888} = \frac{28.2667 - 40.3333}{28.2667 - x}$$

$$15(28.2667 - x) = 0.112(-12.4)$$

$$424.0005 - 15x = -1.3888$$

$$-15x = -1.3888 - 424.0005$$

$$x = \frac{425.3893}{15} = 28.3593 \text{ kg}$$

Interpolasi Akhir:

$$\frac{51 - 25}{51 - 29.6} = \frac{25.3449 - 28.3593}{25.3449 - x}$$

$$26(25.3449 - x) = 21.4(-3.0144)$$

$$658.9674 - 26x = -64.5082$$

$$-26x = -64.5082 - 658.9674$$

$$x = \frac{723.4756}{26} = 27.826 \text{ kg}$$

24. Untuk Gerakan Menurunkan (*Lowering*) Kardus Mainan Puzzle yang sudah diwarnai dengan cat kuas menuju Lantai Stasiun Packaging:

Maximum Acceptable Weight of Lower for Males (kg)

Width Clearance Percent	Floor level to knuckle height One lift every								Knuckle height to shoulder height One lift every								Shoulder height to arm reach One lift every								Note: 1. Width is dimension away from body in cm 2. Distance is vertical lift in cm 3. Percent pertains to industrial population 4. Italicized values exceed 8 hr physiological criteria				
	5				14				1				2				5				30					8			
	s	s	s	s	min	min	min	min	min	min	min	min	min	min	min	min	min	min	min	min	min	min	min	min		h	h	h	h
90	7	9	10	12	14	15	16	20	10	11	14	14	15	15	16	19	6	7	9	9	10	10	11	13					
75	10	13	14	18	20	22	22	29	13	16	18	18	21	21	21	26	9	10	12	12	14	14	14	18					
50	14	17	19	23	27	29	30	38	18	20	24	24	27	27	28	34	11	13	15	16	18	18	19	23					
25	17	21	24	29	33	36	37	47	21	25	29	29	34	34	34	42	14	16	19	20	23	23	23	28					
10	20	25	28	34	39	42	44	56	25	29	34	34	39	39	39	49	16	19	22	23	26	26	27	33					
90	8	10	11	13	15	16	17	21	11	12	14	15	17	17	18	22	7	8	9	10	12	12	12	15					
75	11	14	15	18	21	23	23	30	14	17	20	21	24	24	24	30	9	11	13	14	16	16	16	20					
50	14	18	20	24	28	30	31	40	19	21	25	27	31	31	31	38	12	14	16	18	21	21	21	26					
25	18	22	25	30	34	37	39	49	23	26	31	33	38	38	38	47	15	17	20	22	25	25	26	32					
10	21	26	29	36	41	44	46	58	27	31	36	38	44	44	44	55	17	20	24	26	30	30	30	37					
90	9	11	12	15	17	18	19	24	12	14	17	18	21	21	21	26	8	9	11	12	14	14	14	17					
75	13	16	17	21	24	25	26	34	17	20	23	24	28	28	28	35	11	13	15	16	19	19	19	24					
50	17	21	23	27	31	34	35	45	22	25	30	32	36	36	37	45	14	16	19	21	24	24	25	31					
25	21	25	29	34	39	42	44	56	29	31	37	39	44	44	45	56	17	20	24	26	30	30	30	38					
10	24	31	34	40	46	49	51	66	31	36	43	45	52	52	52	65	20	23	28	30	35	35	35	44					
90	8	10	11	15	17	18	19	24	10	11	14	14	15	15	16	19	7	8	10	11	12	12	12	15					
75	12	15	16	21	24	26	26	34	13	16	18	18	21	21	21	26	10	11	14	15	17	17	17	21					
50	15	19	21	29	31	34	35	45	18	20	24	24	27	27	28	34	13	15	17	19	22	22	22	27					
25	19	24	26	34	39	42	44	56	21	25	29	29	34	34	34	42	16	18	21	23	27	27	27	33					
10	25	28	31	40	46	49	51	65	25	29	34	34	39	39	39	49	18	21	25	27	31	31	31	39					
90	9	11	12	15	17	19	19	25	11	12	14	15	17	17	18	22	8	9	10	12	14	14	14	17					
75	12	15	17	22	25	26	28	36	14	17	20	21	24	24	24	30	10	12	14	16	19	19	19	24					
50	15	20	22	29	33	35	37	47	19	21	25	27	31	31	31	38	14	16	18	21	24	24	25	31					
25	20	25	27	36	41	44	46	58	23	26	31	33	38	38	38	47	17	19	23	26	30	30	30	37					
10	23	29	32	42	48	51	54	68	27	31	36	38	44	44	44	55	19	22	26	30	35	35	35	44					
90	10	13	14	17	20	21	22	28	12	14	17	18	21	21	21	26	9	10	12	14	16	16	16	20					
75	14	18	19	24	28	30	31	40	17	20	23	24	28	28	28	35	12	14	17	19	22	22	22	28					
50	19	24	26	32	37	40	41	54	22	25	30	32	36	36	37	45	16	18	22	25	29	29	29	36					
25	23	29	32	40	46	49	51	65	27	31	37	39	44	44	45	56	20	23	27	31	35	35	36	44					
10	29	34	38	47	54	58	60	77	31	36	43	45	52	52	52	65	23	26	31	36	41	41	41	52					
90	10	12	13	17	19	21	21	27	11	12	14	15	17	17	18	22	9	10	12	12	14	14	14	18					
75	14	17	19	24	27	29	30	39	14	17	20	21	24	24	24	30	12	13	16	17	19	19	19	24					
50	18	23	25	32	36	39	40	51	19	21	25	27	31	31	31	38	15	17	21	22	25	25	25	31					
25	23	29	31	39	45	48	50	64	23	26	31	33	38	38	38	47	19	21	25	27	31	31	31	38					
10	27	34	37	46	53	57	59	75	27	31	36	38	44	44	44	55	22	25	30	31	36	36	36	45					
90	10	13	14	17	20	22	22	29	11	13	15	17	20	20	20	24	9	10	12	14	16	16	16	20					
75	14	18	20	25	28	30	32	40	15	18	21	23	27	27	27	33	12	14	17	19	22	22	22	27					
50	19	24	26	33	37	40	42	53	20	23	27	30	35	35	35	43	16	19	22	24	28	28	28	35					
25	24	30	33	41	47	50	52	69	24	28	33	37	42	42	43	53	20	23	29	30	34	34	35	43					
10	28	35	38	48	55	59	62	78	28	33	39	43	49	49	50	62	23	27	31	35	40	40	40	50					
90	12	15	16	20	23	24	25	32	13	15	18	20	23	23	23	29	11	12	15	16	19	19	19	23					
75	17	21	23	28	32	34	36	46	18	21	25	27	31	31	32	39	15	17	20	22	26	26	26	32					
50	23	28	31	37	42	46	47	60	23	27	32	36	41	41	41	51	19	22	26	29	33	33	33	41					
25	28	35	38	46	53	57	59	76	29	33	39	43	50	50	50	63	23	27	32	35	41	41	41	51					
10	33	41	45	54	62	67	70	89	33	39	46	51	58	58	59	73	27	31	37	41	47	47	48	59					

Snook, S. H. and Ciriello, V. M., The design of manual handling tasks: revised tables of maximum acceptable weights and forces, *Ergonomics*, 34, 9, 1991

Didapatkan Lebar: 34 cm. Jarak: 31.4 cm (terletak diantara 51 cm dan 25 cm), Frekuensi Penurunannya: 4 jam sekali (terletak diantara 8 jam dan 30 menit), dan Persentase populasi yang dapat melakukan pekerjaan tersebut tanpa mengalami kelelahan yang berarti sebesar 89.8436% (Terletak diantara 75% dan 90%). Berikut ini merupakan hasil interpolasinya:

Untuk Jarak 51 cm, persentase 90%: 25.2667 kg

Untuk Jarak 51 cm, persentase 75%: 35.7333 kg

Untuk Jarak 25 cm, persentase 90%: 28.2667 kg

Untuk Jarak 25 cm, persentase 75%: 40.6667 kg

Untuk Jarak 51 cm:

$$\frac{90 - 75}{90 - 89.8436} = \frac{25.2667 - 35.3333}{25.2667 - x}$$

$$15(25.2667 - x) = 0.1564(-10.0666)$$

$$379.0005 - 15x = -1.5744$$

$$-15x = -1.5744 - 379.0005$$

$$x = \frac{380.5749}{15} = 25.3717 \text{ kg}$$

Untuk Jarak 25 cm:

$$\frac{90 - 75}{90 - 89.8436} = \frac{28.2667 - 40.3333}{28.2667 - x}$$

$$15(28.2667 - x) = 0.1564(-12.0666)$$

$$424.0005 - 15x = -1.8872$$

$$-15x = -1.8872 - 424.0005$$

$$x = \frac{425.8877}{15} = 28.3925 \text{ kg}$$

Interpolasi Akhir:

$$\frac{51 - 25}{51 - 31.4} = \frac{25.3717 - 28.3925}{25.3717 - x}$$

$$26(25.3717 - x) = 19.6(-3.0208)$$

$$658.931 - 26x = -59.2077$$

$$-26x = -59.2077 - 658.931$$

$$x = \frac{718.1387}{26} = 27.6207 \text{ kg}$$

25. Untuk Gerakan Mendorong (*Pushing*) Gerobak Pengangkut Hasil Potongan Kayu dari Stasiun Gergaji Besar menuju Stasiun Amplas:

Height Percent	2.1 m push One push every								7.6 m push One push every								15.2 m push One push every								30.5 m push One push every								45.7 m push One push every								61.0 m push One push every							
	6	12	1	2	5	30	8		15	22	1	2	5	30	8		25	35	1	2	5	30	8		1	2	5	30	8		1	2	5	30	8		2	5	30	8								
Initial forces																																																
144	20	22	25	25	26	26	31	14	16	21	21	22	22	26	16	18	19	19	20	21	25	15	16	19	19	24	13	14	16	16	20	12	14	14	18													
75	26	29	32	32	34	34	41	18	20	27	27	28	28	34	21	23	26	26	26	27	32	19	21	25	25	31	16	18	21	21	26	16	18	18	23													
50	32	36	40	40	42	42	51	23	25	33	33	35	35	42	26	29	31	31	33	33	40	24	27	31	31	38	20	23	26	26	33	20	22	22	28													
25	38	43	47	47	50	51	61	27	31	40	40	42	42	51	31	35	37	37	40	40	48	28	32	37	37	46	24	27	32	32	39	23	27	27	34													
10	44	49	55	55	58	58	70	31	35	46	46	48	49	58	36	40	43	43	45	46	56	32	37	42	42	53	28	31	36	36	48	27	31	31	39													
95	21	24	26	26	28	28	34	16	18	23	23	25	25	30	18	21	22	22	23	24	28	17	19	22	22	27	14	16	19	19	23	14	16	16	20													
75	28	31	34	34	36	36	44	21	23	29	29	32	32	39	24	27	28	28	30	30	38	21	24	28	28	35	18	21	24	24	30	18	21	20	26													
50	34	38	43	43	45	45	54	26	29	38	38	40	40	48	29	33	35	35	37	38	45	27	30	35	35	44	23	26	30	30	37	22	26	26	32													
25	41	46	51	51	54	55	65	31	35	45	45	48	48	58	35	40	42	42	45	45	54	32	36	42	42	52	27	31	36	36	45	27	31	31	38													
10	47	53	59	59	62	63	75	35	40	52	52	55	56	66	40	46	49	49	52	52	62	37	41	48	48	60	32	36	41	41	52	31	35	35	44													
64	19	22	24	24	25	26	31	13	14	20	20	21	21	26	15	17	19	19	20	20	24	14	16	19	19	23	12	14	16	16	20	12	14	14	17													
75	25	28	31	31	33	33	40	16	19	26	26	27	28	33	19	21	24	24	26	26	31	18	21	24	24	30	16	18	21	21	26	15	18	18	22													
50	31	35	39	39	41	41	50	20	23	32	32	34	35	41	23	27	30	30	32	33	39	23	26	30	30	37	20	22	26	26	32	19	22	22	28													
25	38	42	46	46	49	50	59	25	28	39	39	41	41	50	28	32	36	36	39	39	47	28	31	36	36	45	24	27	31	31	39	23	26	26	33													
10	43	48	53	53	57	57	68	28	32	45	45	47	48	57	32	37	42	42	44	45	54	32	36	41	41	52	27	31	36	36	44	26	30	30	38													
Sustained forces																																																
144	10	13	15	16	18	18	22	8	9	13	13	15	16	18	8	9	11	12	13	14	16	8	10	12	13	16	7	8	10	11	13	7	8	9	11													
75	13	17	21	22	24	25	30	10	13	17	18	20	21	25	11	13	15	16	18	18	22	11	13	16	18	21	10	11	13	15	18	9	11	13	15													
50	17	22	27	28	31	32	38	13	16	22	23	26	27	32	14	17	20	20	23	24	28	15	17	20	23	28	12	14	17	19	23	12	14	16	19													
25	21	27	33	34	38	40	47	16	20	28	29	32	33	39	17	20	24	25	28	29	34	18	21	25	29	34	15	18	21	24	28	15	17	20	24													
10	25	31	38	40	45	46	54	19	23	32	33	38	39	46	20	24	28	29	33	34	40	21	25	29	33	39	18	21	24	28	33	17	20	23	28													
95	10	13	16	17	19	19	23	8	10	13	13	15	15	18	8	10	11	12	13	13	16	8	10	12	13	16	7	8	9	11	13	7	8	9	11													
75	14	18	22	22	25	26	31	11	13	17	18	20	21	25	11	13	15	16	18	18	21	11	13	16	18	21	9	11	13	15	18	9	11	12	15													
50	18	23	28	29	33	34	40	14	17	22	23	26	27	32	14	17	19	20	23	23	28	15	17	20	23	27	12	14	17	19	23	12	14	16	19													
25	22	28	34	35	40	41	49	17	21	27	29	32	33	39	18	21	24	25	28	29	34	18	21	25	28	33	15	18	21	24	28	15	17	20	23													
10	26	33	40	41	46	48	57	20	24	32	33	37	38	45	20	25	28	29	32	33	40	21	25	29	33	39	17	20	24	27	32	17	20	23	27													
64	10	13	16	16	18	19	23	8	10	12	13	14	15	18	8	10	11	11	12	13	15	8	9	11	13	15	7	8	9	11	13	7	8	9	10													
75	14	18	21	22	25	26	31	11	13	17	17	19	20	24	11	13	14	15	17	17	21	11	13	15	17	20	9	11	12	14	17	9	10	12	14													
50	18	23	28	29	32	33	39	14	17	21	22	25	26	31	14	17	19	19	22	22	27	14	16	19	22	26	12	14	16	18	22	12	14	15	18													
25	22	28	34	35	39	41	48	17	21	26	27	31	32	37	18	21	23	24	27	28	33	17	20	24	27	32	14	17	20	23	27	14	17	19	22													
10	26	32	39	41	46	48	56	20	25	30	32	36	37	44	21	25	27	28	31	32	38	20	24	28	32	37	17	20	23	28	31	16	19	22	26													

Note:
 1. Height is vertical floor to hands in cm
 2. Percent pertains to industrial population
 3. Initial force - required to start motion
 4. Sustained force - required to maintain motion
 4. Italicized values exceed 8 hr physiological criteria

Didapatkan Ketinggian Tangan: 112.5 cm (terletak diantara 95 cm dan 144 cm). Jarak: 13.48 m (terletak diantara 7.6 m dan 15.2 m), Frekuensi mendorongnya: 8 jam sekali, dan Persentase populasi yang dapat melakukan pekerjaan tersebut tanpa mengalami kelelahan yang berarti sebesar 62.1926% (Terletak diantara 50% dan 75%). Berikut ini merupakan hasil interpolasinya:

Untuk Ketinggian Tangan 144 cm, Jarak 15.2 m:

$$\frac{75 - 50}{75 - 62.1926} = \frac{22 - 28}{22 - x}$$

$$25(22 - x) = 12.8074(-6)$$

$$550 - 25x = -76.8444$$

$$-25x = -76.8444 - 550$$

$$x = \frac{626.8444}{25} = 25.0738 \text{ kg}$$

Untuk Ketinggian Tangan 144 cm, Jarak 7.6 m:

$$\frac{75 - 50}{75 - 62.1926} = \frac{25 - 32}{25 - x}$$

$$25(25 - x) = 12.8074(-7)$$

$$625 - 25x = -89.6518$$

$$-25x = -89.6518 - 625$$

$$x = \frac{714.6518}{25} = 28.5861 \text{ kg}$$

Untuk Ketinggian Tangan 95 cm, Jarak 15.2 m:

$$\frac{75 - 50}{75 - 62.1926} = \frac{21 - 28}{21 - x}$$

$$25(21 - x) = 12.8074(-7)$$

$$525 - 25x = -89.6518$$

$$-25x = -89.6518 - 525$$

$$x = \frac{614.6518}{25} = 24.5861 \text{ kg}$$

Untuk Ketinggian Tangan 95 cm, Jarak 7.6 m:

$$\frac{75 - 50}{75 - 62.1926} = \frac{25 - 32}{25 - x}$$

$$25(25 - x) = 12.8074(-7)$$

$$625 - 25x = -89.6518$$

$$-25x = -89.6518 - 625$$

$$x = \frac{714.6518}{25} = 28.5861 \text{ kg}$$

Untuk Ketinggian Tangan 144 cm:

$$\frac{15.2 - 7.6}{15.2 - 13.48} = \frac{25.0738 - 28.5861}{25.0738 - x}$$

$$7.6(25.0738 - x) = 1.72(-3.5123)$$

$$190.5609 - 7.6x = -6.0412$$

$$-7.6x = -6.0412 - 190.5609$$

$$x = \frac{196.6021}{7.6} = 25.8687 \text{ kg}$$

Untuk Ketinggian Tangan 95 cm:

$$\frac{15.2 - 7.6}{15.2 - 13.48} = \frac{24.5861 - 28.5861}{24.5861 - x}$$

$$7.6(24.5861 - x) = 1.72(-4)$$

$$186.8544 - 7.6x = -6.88$$

$$-7.6x = -6.88 - 186.8544$$

$$x = \frac{193.7344}{7.6} = 25.4913 \text{ kg}$$

Interpolasi Akhir:

$$\frac{144 - 95}{144 - 112.5} = \frac{25.8687 - 25.4913}{25.8687 - x}$$

$$49(25.8687 - x) = 31.5(0.3774)$$

$$1267.5663 - 49x = 11.8881$$

$$-49x = 11.8881 - 1267.5663$$

$$x = \frac{1255.6782}{49} = 25.6261 \text{ kg}$$

26. Untuk Gerakan Mengangkat (*Lifting*) Hasil Potongan Kepingan *Puzzle* dari Lantai Stasiun *Press* menuju Gerobak Pengangkut:

Maximum Acceptable Weight of Lift for Males (kg)

Width Distance Percent	Floor level to knuckle height One lift every								Knuckle height to shoulder height One lift every								Shoulder height to arm reach One lift every							
	5	9	14	1	2	5	30	8	5	9	14	1	2	5	30	8	5	9	14	1	2	5	30	8
	s	s	min	min	min	min	h	s	s	min	min	min	min	min	h	s	s	min	min	min	min	min	h	
90	6	7	9	11	13	14	14	17	8	10	12	13	14	14	16	17	6	8	9	10	10	11	12	13
75	9	11	13	16	19	20	21	24	10	14	16	18	18	19	21	23	8	10	12	14	14	14	16	17
76	12	15	17	22	25	27	28	32	13	17	20	22	23	24	26	29	10	13	15	17	17	18	20	22
25	15	18	21	28	31	34	35	41	16	21	24	27	27	28	32	35	11	16	18	21	21	22	24	27
10	18	22	25	33	37	40	41	48	19	24	28	31	32	33	37	40	14	18	21	24	24	25	28	31
90	6	8	9	12	13	15	15	17	8	11	13	15	15	16	18	19	6	8	9	12	12	12	14	15
75	9	11	13	17	19	21	22	25	11	15	17	20	20	21	23	25	8	11	12	15	15	16	18	20
76	13	15	18	23	26	28	29	34	14	19	21	25	25	26	29	32	10	14	16	19	20	20	23	25
25	16	19	22	29	33	35	36	42	17	23	26	30	31	32	36	39	13	17	19	23	24	25	27	30
10	19	22	26	34	38	42	43	50	20	26	30	35	36	37	41	45	15	19	22	27	27	29	32	35
90	8	9	11	13	15	16	17	20	10	13	15	18	18	19	21	23	7	10	11	14	14	14	16	18
75	11	13	15	19	22	24	24	28	13	17	20	23	24	25	27	30	10	13	15	18	18	19	21	23
25	15	18	21	26	29	32	33	38	17	22	25	30	30	31	35	38	12	16	19	23	23	24	27	29
25	18	22	25	33	37	40	41	48	20	27	30	36	36	38	42	46	15	20	22	28	28	29	32	35
10	22	26	31	38	44	47	49	57	23	31	36	42	42	44	49	53	17	23	26	32	32	34	38	41
90	7	8	10	13	15	16	17	20	8	10	12	13	14	14	16	17	7	9	10	12	12	13	14	16
75	10	12	14	19	22	24	24	28	10	14	16	18	18	19	21	23	9	11	13	16	16	17	19	21
76	14	16	19	26	29	32	33	38	13	17	20	22	23	24	26	29	11	15	17	20	21	21	24	26
25	17	20	24	33	37	40	41	48	16	21	24	27	27	28	32	35	13	18	20	25	25	26	29	31
10	20	24	28	38	43	47	48	57	19	24	28	31	32	33	37	40	15	21	23	28	29	30	33	36
90	7	9	10	14	16	17	18	20	8	11	13	15	15	16	18	19	7	9	11	14	14	14	16	18
75	10	13	15	20	23	25	25	30	11	15	17	20	20	21	23	25	9	12	14	18	18	19	21	23
51	14	17	20	27	30	33	34	40	14	19	21	25	25	26	29	32	12	15	18	23	23	24	27	29
25	18	21	25	34	38	42	43	50	17	23	26	30	31	32	36	39	14	19	21	28	28	29	32	35
10	21	25	29	40	45	49	50	59	20	26	30	35	36	37	41	45	16	22	25	32	32	34	37	41
90	8	10	12	16	18	19	20	23	10	13	15	18	18	19	21	23	9	11	12	16	16	17	19	21
75	12	15	17	23	26	28	29	33	13	17	20	23	24	25	27	30	11	14	16	21	21	22	25	27
25	16	20	23	30	34	37	38	45	17	22	25	30	30	31	35	38	14	18	21	27	27	28	32	35
25	21	25	29	38	43	47	48	56	20	27	30	36	36	38	42	46	16	22	25	33	33	34	38	42
10	24	29	34	45	51	56	57	67	23	31	36	42	42	44	49	53	19	25	29	38	38	40	44	48
90	8	10	11	15	17	19	19	23	8	11	13	15	15	16	18	19	8	10	12	14	14	15	16	18
75	12	14	17	22	25	28	28	33	11	15	17	20	20	21	23	25	10	14	16	18	19	19	24	24
76	16	19	22	30	34	37	38	44	14	19	21	25	25	26	29	32	13	17	20	23	24	25	27	30
25	20	24	28	37	42	47	47	55	17	23	26	30	31	32	36	39	16	21	24	28	29	30	33	36
10	24	29	33	44	50	54	56	65	20	26	30	35	36	37	41	45	18	24	28	33	33	34	38	42
90	9	10	12	16	18	20	20	24	9	12	14	17	17	18	20	22	8	11	13	16	16	17	18	20
75	12	15	18	23	26	28	29	34	12	16	18	22	23	23	26	29	11	14	17	21	21	22	24	26
51	17	20	24	31	35	38	39	45	15	20	23	28	29	30	33	36	14	18	21	26	27	28	31	34
25	21	25	30	39	44	48	49	57	18	24	27	34	35	36	40	44	17	22	25	32	32	33	37	41
10	25	30	35	46	52	57	58	68	21	28	32	40	40	42	46	51	19	26	29	37	37	39	43	47
90	10	12	14	18	20	22	23	27	11	14	16	20	20	21	23	26	10	13	15	19	19	19	22	24
75	15	18	21	26	30	32	33	38	14	18	21	26	27	28	31	34	13	17	20	24	25	26	29	31
25	20	24	28	35	40	43	44	52	18	23	27	33	34	35	39	43	16	22	25	31	31	33	36	40
25	26	30	35	44	50	54	55	65	21	28	32	40	41	42	47	52	20	26	30	37	38	39	44	46
10	29	35	41	52	59	64	66	76	25	33	37	47	47	49	55	60	23	30	35	43	44	45	51	55

Note:
 1. Width is dimension away from body in cm
 2. Distance is vertical lift in cm
 3. Percent pertains to Industrial population
 4. Italicized values exceed 8 hr physiological criteria

Didapatkan Lebar: 34 cm. Jarak: 49.8 cm (terletak diantara 51 cm dan 25 cm), Frekuensi Pengangkatannya: 8 jam sekali, dan Persentase populasi yang dapat melakukan pekerjaan tersebut tanpa mengalami kelelahan yang berarti sebesar 79.7342% (Terletak diantara 75% dan 90%). Berikut ini merupakan hasil interpolasinya:

Untuk Jarak 51 cm:

$$\frac{90 - 75}{90 - 79.7342} = \frac{24 - 34}{24 - x}$$

$$15(24 - x) = 10.2658(-10)$$

$$360 - 15x = -102.658$$

$$-15x = -102.658 - 360$$

$$x = \frac{462.658}{15} = 30.8439 \text{ kg}$$

Untuk Jarak 25 cm:

$$\frac{90 - 75}{90 - 79.7342} = \frac{27 - 38}{27 - x}$$

$$15(27 - x) = 10.2658(-11)$$

$$405 - 15x = -112.9238$$

$$-15x = -112.9238 - 405$$

$$x = \frac{517.9238}{15} = 34.5283 \text{ kg}$$

Interpolasi Akhir:

$$\frac{51 - 25}{51 - 49.8} = \frac{30.8439 - 34.5283}{30.8439 - x}$$

$$26(30.8439 - x) = 1.2(-3.6844)$$

$$801.9414 - 26x = -4.4213$$

$$-26x = -4.4213 - 801.9414$$

$$x = \frac{806.3627}{26} = 31.014 \text{ kg}$$

27. Untuk Gerakan Menurunkan (*Lowering*) Hasil Potongan Kepingan *Puzzle* dari Gerobak Dorong menuju Lantai Stasiun Cat Semprot:

Maximum Acceptable Weight of Lower for Males (kg)

Width Distance Percent	Floor level to knuckle height One lift every										Knuckle height to shoulder height One lift every								Shoulder height to arm reach One lift every																																																																																																					
	5					14					5					5				14				1				2				5				30				8																																																																																
	s	s	s	s	s	min	min	min	min	min	min	min	min	min	min	s	s	s	s	s	min	min	min	min	min	min	min	min	min	min	min	min	min	min	min	min	min	min	min	min	min	min	min	min	min																																																																											
90	7	9	10	12	14	15	16	20	10	11	14	14	15	15	16	19	6	7	9	9	10	10	11	13	10	13	14	18	20	22	22	29	13	16	18	18	21	21	21	26	9	10	12	12	14	14	14	18	14	17	19	23	27	29	30	38	18	20	24	24	27	27	28	34	11	13	15	16	18	18	19	23	17	21	24	29	33	36	37	47	21	25	29	29	34	34	34	42	14	16	19	20	23	23	23	28	20	25	28	34	39	42	44	56	25	29	34	34	39	39	39	49	16	19	22	23	26	26	27	33
75	8	10	11	13	15	16	17	21	11	12	14	15	17	17	18	22	7	8	9	10	12	12	12	15	11	16	17	21	24	25	26	34	14	17	20	21	24	24	24	30	9	11	13	14	16	16	16	20	14	18	20	24	28	30	31	40	19	21	25	27	31	31	31	38	12	14	16	18	21	21	21	26	18	22	25	30	34	37	39	49	23	26	31	33	38	38	38	47	15	17	20	22	25	25	26	32	21	26	29	36	41	44	46	58	27	31	36	38	44	44	44	55	17	20	24	26	30	30	30	37
50	9	11	12	15	17	18	19	24	12	14	17	18	21	21	21	26	8	9	11	12	14	14	14	17	13	16	17	21	24	25	26	34	17	20	23	24	28	28	28	35	11	13	15	16	19	19	19	24	17	21	23	27	31	34	35	45	22	25	30	32	36	36	37	45	14	16	19	21	24	24	25	31	21	26	29	34	39	42	44	56	29	31	37	39	44	44	45	56	17	20	24	26	30	30	30	38	24	31	34	40	46	49	51	66	31	36	43	45	52	52	52	65	20	23	28	30	35	35	35	44
25	8	10	11	15	17	18	19	24	10	11	14	14	15	15	16	19	7	8	10	11	12	12	12	15	13	16	17	21	24	25	26	34	13	16	18	18	21	21	21	26	10	11	14	15	17	17	17	21	17	21	23	27	31	34	35	45	18	20	24	24	27	27	28	34	13	15	17	19	22	22	22	27	19	24	26	34	39	42	44	56	21	25	29	29	34	34	34	42	16	18	21	23	27	27	27	33	25	28	31	40	46	49	51	65	25	29	34	34	39	39	39	49	18	21	25	27	31	31	31	39
10	9	11	12	15	17	18	19	25	11	12	14	15	17	17	18	22	8	9	10	12	14	14	14	17	14	16	17	21	24	25	26	35	14	17	20	21	24	24	24	30	10	12	14	15	19	19	19	24	17	21	23	27	31	34	35	45	19	21	25	27	31	31	31	38	14	16	18	21	24	24	25	31	20	25	27	36	41	44	46	58	23	26	31	33	38	38	38	47	17	19	23	26	30	30	30	37	23	29	32	42	48	51	54	68	27	31	36	38	44	44	44	55	19	22	26	30	35	35	35	44
51	10	13	14	17	20	21	22	28	12	14	17	18	21	21	21	26	9	10	12	14	16	16	16	20	14	18	19	24	28	30	31	40	17	20	23	24	28	28	28	35	12	14	17	19	22	22	22	28	19	24	26	32	37	40	41	54	22	25	30	32	36	36	37	45	16	18	22	25	29	29	29	36	23	29	32	40	46	49	51	65	27	31	37	39	44	44	45	56	20	23	27	31	35	35	36	44	29	34	38	47	54	58	60	77	31	36	43	45	52	52	52	65	23	26	31	36	41	41	41	52
75	10	12	13	17	19	21	21	27	11	12	14	15	17	17	18	22	9	10	12	12	14	14	14	18	14	17	19	24	27	29	30	39	14	17	20	21	24	24	24	30	12	13	16	17	19	19	19	24	18	23	25	32	36	39	40	51	19	21	25	27	31	31	31	38	15	17	21	22	25	25	25	31	23	29	31	39	45	48	50	64	23	26	31	33	38	38	38	47	19	21	25	27	31	31	31	38	27	34	37	46	53	57	59	75	27	31	36	38	44	44	44	55	22	25	30	31	36	36	36	45
25	10	13	14	17	20	22	22	29	11	13	15	17	20	20	20	24	9	10	12	14	16	16	16	20	14	18	20	25	28	30	32	40	15	18	21	23	27	27	27	33	12	14	17	19	22	22	22	27	19	24	26	33	37	40	42	53	20	23	27	30	35	35	35	43	16	19	22	24	28	28	28	35	24	30	33	41	47	50	52	69	24	28	33	37	42	42	43	53	20	23	29	30	34	34	35	43	28	35	38	48	55	59	62	78	28	33	39	43	49	49	50	62	23	27	31	35	40	40	40	50
10	12	15	16	20	23	24	25	32	13	15	18	20	23	23	23	29	11	12	15	16	19	19	19	23	17	21	23	28	32	34	36	45	18	21	25	27	31	31	32	39	15	17	20	22	26	26	26	32	23	28	31	37	42	46	47	60	23	27	32	35	41	41	41	51	19	22	26	29	33	33	33	41	28	35	38	46	53	57	59	78	29	33	39	43	50	50	50	63	23	27	32	35	41	41	41	51																								
50	17	21	23	28	32	34	36	45	18	21	25	27	31	31	32	39	15	17	20	22	26	26	32	23	28	31	37	42	46	47	60	23	27	32	35	41	41	41	51	19	22	26	29	33	33	33	41	28	35	38	46	53	57	59	78	29	33	39	43	50	50	50	63	23	27	32	35	41	41	41	51	33	41	45	54	62	67	70	89	33	39	46	51	58	58	59	73	27	31	37	41	47	47	48	59																									

Note:
 1. Width is dimension away from body in cm
 2. Distance is vertical lift in cm
 3. Percent pertains to Industrial population
 4. Italicized values exceed 8 hr physiological criteria

Didapatkan Lebar: 34 cm. Jarak: 38.7 cm (terletak diantara 51 cm dan 25 cm), Frekuensi Penurunannya: 8 jam sekali, dan Persentase populasi yang dapat melakukan pekerjaan tersebut tanpa mengalami kelelahan yang berarti sebesar 89.938% (Terletak diantara 75% dan 90%). Berikut ini merupakan hasil interpolasinya:

Untuk Jarak 51 cm:

$$\frac{90 - 75}{90 - 89.938} = \frac{29 - 40}{29 - x}$$

$$15(29 - x) = 0.062(-11)$$

$$435 - 15x = -0.682$$

$$-15x = -0.682 - 435$$

$$x = \frac{435.682}{15} = 29.0455 \text{ kg}$$

Untuk Jarak 25 cm:

$$\frac{90 - 75}{90 - 89.938} = \frac{32 - 46}{32 - x}$$

$$15(32 - x) = 0.062(-12)$$

$$480 - 15x = -0.744$$

$$-15x = -0.744 - 480$$

$$x = \frac{480.744}{15} = 32.0496 \text{ kg}$$

Interpolasi Akhir:

$$\frac{51 - 25}{51 - 38.7} = \frac{29.0455 - 32.0496}{29.0455 - x}$$

$$26(29.0455 - x) = 12.3(-3.0041)$$

$$755.183 - 26x = -36.9504$$

$$-26x = -36.9504 - 755.183$$

$$x = \frac{792.1334}{26} = 30.4667 \text{ kg}$$

HITUNGAN ANALISIS SNOOK TABLE FOR POPULATION PERCENTAGE UNTUK USULAN

1. Untuk Gerakan Mendorong (*Pushing*) Gerobak Dorong berisi Bahan Kayu dari Gudang menuju Stasiun Gergaji Besar:

**TABLE 8M - MALE POPULATION PERCENTAGES FOR PUSHING TASKS
SUSTAINED FORCE**

SUSTAINED PUSHING FORCE (POUNDS)	HAND HEIGHT (INCHES)	PUSHING DISTANCE		7 FEET					25 FEET					50 FEET				
		FREQUENCY		30s	1m	5m	30m	8h	30s	1m	5m	30m	8h	30s	1m	5m	30m	8h
		ONE PUSH EVERY																
105		57	-	-	-	-	23	-	-	-	-	-	-	-	-	-	-	-
		37	-	-	-	11	28	-	-	-	-	-	-	-	-	-	-	-
		25	-	-	-	-	27	-	-	-	-	-	-	-	-	-	-	-
100		57	-	-	-	12	29	-	-	-	-	11	-	-	-	-	-	-
		37	-	-	12	15	34	-	-	-	-	-	-	-	-	-	-	-
		25	-	-	11	14	32	-	-	-	-	-	-	-	-	-	-	-
95		57	-	-	13	16	35	-	-	-	-	16	-	-	-	-	-	-
		37	-	-	17	20	40	-	-	-	-	14	-	-	-	-	-	-
		25	-	-	16	19	39	-	-	-	-	11	-	-	-	-	-	-
90		57	-	-	18	22	42	-	-	-	-	21	-	-	-	-	-	-
		37	-	-	22	26	47	-	-	-	-	20	-	-	-	-	-	-
		25	-	-	21	25	45	-	-	-	-	16	-	-	-	-	-	-
85		57	-	-	24	28	49	-	-	-	11	27	-	-	-	-	-	-
		37	-	13	29	33	53	-	-	-	-	26	-	-	-	-	-	-
		25	-	12	28	32	52	-	-	-	-	22	-	-	-	-	-	-
80		57	-	14	31	36	56	-	-	13	16	36	-	-	-	-	-	13
		37	-	18	36	41	60	-	-	12	15	33	-	-	-	-	-	12
		25	-	17	35	39	59	-	-	-	12	29	-	-	-	-	-	-
75		57	-	21	39	44	63	-	-	19	23	43	-	-	-	-	-	19
		37	13	25	44	49	67	-	-	18	21	41	-	-	-	-	-	18
		25	12	24	43	47	66	-	-	14	17	37	-	-	-	-	-	14
70		57	16	29	48	52	69	-	11	27	31	51	-	-	12	15	26	26
		37	20	33	53	57	72	-	-	25	29	50	-	-	12	14	24	24
		25	19	32	52	55	72	-	-	21	25	45	-	-	-	-	11	20
65		57	23	38	57	60	75	-	18	36	40	50	-	-	19	23	34	34
		37	28	43	61	64	78	-	16	34	38	58	-	-	18	22	33	33
		25	27	42	60	63	77	-	13	29	34	54	-	-	14	18	29	29
60		57	33	48	65	68	80	-	26	46	50	57	-	-	12	28	33	43
		37	38	52	69	71	82	-	25	44	48	66	-	-	11	27	31	42
		25	37	51	68	71	82	-	21	39	44	63	-	-	23	26	37	37
55		57	44	58	72	75	85	11	37	56	60	75	-	-	20	39	43	53
		37	49	62	76	78	86	14	36	55	58	74	-	-	19	38	42	52
		25	47	61	75	77	86	13	31	50	54	71	-	-	15	33	37	47
50		57	55	67	79	81	88	20	49	66	69	81	-	-	32	51	55	62
		37	59	71	82	83	83	23	47	65	68	80	-	-	30	50	53	61
		25	58	70	81	83	89	23	43	61	64	78	-	-	25	45	49	57
45		57	66	76	85	86	+	32	61	75	77	86	15	45	62	66	71	71
		37	70	78	86	88	+	36	59	74	76	85	19	43	61	65	70	70
		25	69	78	86	87	+	35	55	71	73	84	20	38	57	61	67	67
40		57	76	83	89	+	+	47	72	82	84	+	28	58	73	76	79	79
		37	78	85	+	+	+	50	71	81	83	+	33	57	72	75	78	78
		25	78	84	+	+	+	50	67	79	81	88	34	53	69	72	75	75
35		57	84	88	+	+	+	62	81	88	89	+	44	71	82	83	85	85
		37	85	+	+	+	+	65	80	87	89	+	49	70	81	83	85	85
		25	85	89	+	+	+	65	78	86	87	+	50	67	79	81	83	83
30		57	+	+	+	+	+	75	88	+	+	+	62	82	88	89	+	+
		37	+	+	+	+	+	77	87	+	+	+	66	81	88	89	+	+
		25	+	+	+	+	+	77	86	+	+	+	67	79	87	88	88	88
25		57	+	+	+	+	+	86	+	+	+	+	77	89	+	+	+	+
		37	+	+	+	+	+	87	+	+	+	+	80	89	+	+	+	+
		25	+	+	+	+	+	87	+	+	+	+	80	88	+	+	+	+
20		57	+	+	+	+	+	+	+	+	+	+	88	+	+	+	+	+
		37	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
		25	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+

+ = GREATER THAN 90% - = LESS THAN 10%

Didapatkan Ketinggian Tangannya saat memulai adalah 44.29 inchi (terletak diantara 37 inchi dan 57 inchi), Jarak mendorongnya adalah 28.38 Feet (terletak diantara 25 feet dan 50 feet), Frekuensi Mendorongnya 8 Jam Sekali dan Gaya Berkelanjutan yang digunakan untuk mendorong beban yang ada adalah 62.99 pound (terletak diantara 60 pound dan 65 pound). Berikut ini merupakan hasil interpolasinya:

Untuk Gaya Berkelanjutan 65 pound, Jarak 25 Feet:

$$\frac{57 - 37}{57 - 44.29} = \frac{60 - 58}{60 - x}$$

$$20(60 - x) = 12.71(2)$$

$$1200 - 20x = 25.42$$

$$-20x = 25.42 - 1200$$

$$x = \frac{1174.58}{20} = 58.729\%$$

Untuk Gaya Berkelanjutan 65 pound, Jarak 50 Feet:

$$\frac{57 - 37}{57 - 44.29} = \frac{34 - 33}{34 - x}$$

$$20(34 - x) = 12.71(1)$$

$$680 - 20x = 12.71$$

$$-20x = 12.71 - 680$$

$$x = \frac{667.29}{20} = 33.3645\%$$

Untuk Gaya Berkelanjutan 60 pound, Jarak 25 Feet:

$$\frac{57 - 37}{57 - 44.29} = \frac{67 - 66}{67 - x}$$

$$20(67 - x) = 12.71(1)$$

$$1340 - 20x = 12.71$$

$$-20x = 12.71 - 1340$$

$$x = \frac{1327.29}{20} = 66.3645\%$$

Untuk Gaya Berkelanjutan 60 pound, Jarak 50 Feet:

$$\frac{57 - 37}{57 - 44.29} = \frac{43 - 42}{43 - x}$$

$$20(43 - x) = 12.71(1)$$

$$860 - 20x = 12.71$$

$$-20x = 12.71 - 860$$

$$x = \frac{847.29}{20} = 42.3645\%$$

Untuk Gaya Berkelanjutan 65 pound:

$$\frac{50 - 25}{50 - 28.38} = \frac{33.3645 - 58.729}{33.3645 - x}$$

$$25(33.3645 - x) = 21.62(-25.3645)$$

$$834.1125 - 25x = -548.3805$$

$$-25x = -548.3805 - 834.1125$$

$$x = \frac{1382.493}{25} = 55.2997\%$$

Untuk Gaya Berkelanjutan 60 pound:

$$\frac{50 - 25}{50 - 28.38} = \frac{42.3645 - 66.3645}{42.3645 - x}$$

$$25(42.3645 - x) = 21.62(-24)$$

$$1059.1125 - 25x = -518.88$$

$$-25x = -518.88 - 1059.1125$$

$$x = \frac{1557.9925}{25} = 62.3197\%$$

Interpolasi Akhir:

$$\frac{65 - 60}{65 - 62.99} = \frac{55.2997 - 62.3197}{55.2997 - x}$$

$$5(55.2997 - x) = 2.01(-7.02)$$

$$276.4985 - 5x = -14.1102$$

$$-5x = -14.1102 - 276.4985$$

$$x = \frac{290.6087}{5} = 58.1217\%$$

2. Untuk Gerakan Mendorong (*Pushing*) Gerobak Dorong berisi Potongan Kayu dari Stasiun Gergaji Besar menuju Stasiun Amplas:

TABLE 8M - MALE POPULATION PERCENTAGES FOR PUSHING TASKS
SUSTAINED FORCE

PUSHING DISTANCE		7 FEET					25 FEET					50 FEET						
		30s	1m	5m	30m	8h	30s	1m	5m	30m	8h	30s	1m	5m	30m	8h		
SUSTAINED PUSHING FORCE (POUNDS)	105	57	-	-	-	23	-	-	-	-	-	-	-	-	-	-	-	
		37	-	-	-	11	28	-	-	-	-	-	-	-	-	-	-	
		25	-	-	-	-	27	-	-	-	-	-	-	-	-	-	-	
	100	57	-	-	-	12	29	-	-	-	-	11	-	-	-	-	-	
		37	-	-	12	15	34	-	-	-	-	-	-	-	-	-	-	
		25	-	-	11	14	32	-	-	-	-	-	-	-	-	-	-	
	95	57	-	-	13	16	35	-	-	-	-	16	-	-	-	-	-	
		37	-	-	17	20	40	-	-	-	-	14	-	-	-	-	-	
		25	-	-	16	19	39	-	-	-	-	11	-	-	-	-	-	
	90	57	-	-	18	22	42	-	-	-	-	21	-	-	-	-	-	
		37	-	-	22	26	47	-	-	-	-	20	-	-	-	-	-	
		25	-	-	21	25	45	-	-	-	-	16	-	-	-	-	-	
	85	57	-	-	24	28	49	-	-	-	11	27	-	-	-	-	-	
		37	-	13	29	33	53	-	-	-	-	26	-	-	-	-	-	
		25	-	12	28	32	52	-	-	-	-	22	-	-	-	-	-	
	80	57	-	14	31	36	56	-	-	13	16	36	-	-	-	-	13	
		37	-	18	36	41	60	-	-	12	15	33	-	-	-	-	12	
		25	-	17	35	39	59	-	-	-	12	29	-	-	-	-	-	
	75	57	-	21	39	44	63	-	-	19	23	43	-	-	-	-	19	
		37	-	13	25	44	49	67	-	-	18	21	41	-	-	-	18	
25		-	12	24	43	47	66	-	-	14	17	37	-	-	-	14		
70	57	16	29	48	52	69	-	11	27	31	51	-	-	12	15	26		
	37	20	33	53	57	72	-	-	25	29	50	-	-	12	14	24		
	25	19	32	52	55	72	-	-	21	25	45	-	-	-	11	20		
65	57	23	38	57	60	75	-	-	18	36	40	60	-	-	19	23	34	
	37	28	43	61	64	78	-	-	16	34	38	58	-	-	18	22	33	
	25	27	42	60	63	77	-	-	13	29	34	54	-	-	14	18	28	
60	57	33	48	65	68	80	-	-	26	46	50	67	-	-	12	28	33	43
	37	38	52	69	71	82	-	-	25	44	48	66	-	-	11	27	31	42
	25	37	51	68	71	82	-	-	21	39	44	64	-	-	-	23	26	37
55	57	44	58	72	75	85	11	37	56	60	75	-	-	20	39	43	53	
	37	49	62	76	78	86	14	36	55	58	74	-	-	19	38	42	52	
	25	47	61	75	77	86	13	31	50	54	71	-	-	15	33	37	47	
50	57	55	67	79	81	88	20	49	66	69	81	-	-	32	51	55	62	
	37	59	71	82	83	88	23	47	65	68	80	-	-	30	50	53	61	
	25	58	70	81	83	89	23	43	61	64	78	-	-	25	45	48	57	
45	57	66	76	85	86	88	32	61	75	77	86	15	45	62	66	71		
	37	70	78	86	88	88	36	59	74	76	85	19	43	61	65	70		
	25	69	78	86	87	87	35	55	71	73	84	20	38	57	61	67		
40	57	76	83	89	+	+	47	72	82	84	+	28	58	73	76	79		
	37	78	85	+	+	+	50	71	81	83	+	33	57	72	75	78		
	25	79	84	+	+	+	50	67	79	81	88	34	53	69	72	75		
35	57	84	88	+	+	+	62	81	88	89	+	44	71	82	83	85		
	37	85	+	+	+	+	65	80	87	89	+	49	70	81	83	85		
	25	85	89	+	+	+	65	78	86	87	+	50	67	79	81	83		
30	57	+	+	+	+	+	75	88	+	+	+	62	82	88	89	+		
	37	+	+	+	+	+	77	87	+	+	+	66	81	88	89	+		
	25	+	+	+	+	+	77	86	+	+	+	67	79	87	88	88		
25	57	+	+	+	+	+	86	+	+	+	+	77	89	+	+	+		
	37	+	+	+	+	+	87	+	+	+	+	80	89	+	+	+		
	25	+	+	+	+	+	87	+	+	+	+	80	88	+	+	+		
20	57	+	+	+	+	+	+	+	+	+	+	88	+	+	+	+		
	37	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
	25	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		

+ = GREATER THAN 90% - = LESS THAN 10%

Didapatkan Ketinggian Tangannya saat memulai adalah 44.29 inchi (terletak diantara 37 inchi dan 57 inchi), Jarak mendorongnya adalah 15.91 Feet (terletak diantara 25 feet dan 50 feet), Frekuensi Mendorongnya 8 Jam Sekali dan Gaya Berkelanjutan yang digunakan untuk mendorong beban yang ada adalah 52.42 pound (terletak diantara 50 pound dan 55 pound). Berikut ini merupakan hasil interpolasinya:

Untuk Gaya Berkelanjutan 55 pound, Jarak 7 Feet:

$$\frac{57 - 37}{57 - 44.29} = \frac{85 - 86}{85 - x}$$

$$20(85 - x) = 12.71(-1)$$

$$1700 - 20x = -12.71$$

$$-20x = -12.71 - 1700$$

$$x = \frac{1712.71}{20} = 85.6355\%$$

Untuk Gaya Berkelanjutan 55 pound, Jarak 25 Feet:

$$\frac{57 - 37}{57 - 44.29} = \frac{75 - 74}{75 - x}$$

$$20(75 - x) = 12.71(1)$$

$$1500 - 20x = 12.71$$

$$-20x = 12.71 - 1500$$

$$x = \frac{1487.29}{20} = 74.3645\%$$

Untuk Gaya Berkelanjutan 50 pound, Jarak 7 Feet:

$$\frac{57 - 37}{57 - 44.29} = \frac{88 - 90}{88 - x}$$

$$20(88 - x) = 12.71(-1)$$

$$1760 - 20x = -12.71$$

$$-20x = -12.71 - 1760$$

$$x = \frac{1772.71}{20} = 88.6355\%$$

Untuk Gaya Berkelanjutan 50 pound, Jarak 25 Feet:

$$\frac{57 - 37}{57 - 44.29} = \frac{81 - 80}{81 - x}$$

$$20(43 - x) = 12.71(-1)$$

$$860 - 20x = -12.71$$

$$-20x = -12.71 - 860$$

$$x = \frac{872.71}{20} = 43.6355\%$$

Untuk Gaya Berkelanjutan 55 pound:

$$\frac{25 - 7}{25 - 15.91} = \frac{74.3645 - 85.6355}{74.3645 - x}$$

$$18(74.3645 - x) = 9.09(-11.271)$$

$$1338.561 - 18x = -102.4534$$

$$-18x = -102.4534 - 1338.561$$

$$x = \frac{1441.0144}{18} = 80.0564\%$$

Untuk Gaya Berkelanjutan 60 pound:

$$\frac{25 - 7}{25 - 15.91} = \frac{43.6355 - 88.6355}{43.6355 - x}$$

$$18(43.6355 - x) = 9.09(-45)$$

$$785.439 - 18x = -409.05$$

$$-18x = -409.05 - 785.439$$

$$x = \frac{1194.489}{18} = 66.3605\%$$

Interpolasi Akhir:

$$\frac{55 - 50}{55 - 52.42} = \frac{66.3605 - 80.0564}{66.3605 - x}$$

$$5(66.3605 - x) = 2.58(-13.6959)$$

$$331.8025 - 5x = -35.3354$$

$$-5x = -35.3354 - 331.8025$$

$$x = \frac{367.1379}{5} = 73.4276\%$$

3. Untuk Gerakan Membawa (*Carrying*) Kardus berisi Potongan Kayu yang Sudah Dihaluskan dari Stasiun Amplas menuju Stasiun Gergaji Kecil dan *Drilling*:

TABLE 11M - MALE POPULATION PERCENTAGES FOR CARRYING TASKS

		CARRYING DISTANCE		7 FEET					14 FEET					28 FEET				
		FREQUENCY ONE CARRY EVERY		15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h
OBJECT WEIGHT (POUNDS)	HAND HEIGHT (INCHES)	99	43	-	-	-	18	50	-	-	-	-	36	-	-	-	-	22
			33	-	11	22	36	67	-	-	11	21	54	-	-	-	15	47
		94	43	-	-	12	23	56	-	-	-	12	42	-	-	-	-	28
			33	-	15	28	42	71	-	-	15	27	60	-	-	11	20	53
		89	43	-	-	17	29	62	-	-	-	17	49	-	-	-	-	34
			33	14	20	35	49	75	-	-	21	34	65	-	15	16	26	59
		85	43	-	-	22	35	66	-	-	11	21	54	-	-	-	-	40
			33	18	25	40	54	78	-	-	26	39	70	-	19	20	32	64
		81	43	-	14	27	41	70	-	-	15	27	60	-	-	-	14	46
			33	23	31	46	59	81	-	13	31	45	73	11	24	25	38	68
		77	43	13	19	33	47	74	-	-	20	33	66	-	-	-	19	52
			33	29	37	52	64	84	-	17	38	51	77	15	30	31	44	73
		73	43	18	25	40	53	78	-	-	26	39	69	-	13	14	25	58
			33	35	44	58	69	86	11	23	44	57	80	21	37	38	50	76
		69	43	24	32	46	59	81	-	13	32	46	74	-	18	19	31	63
			33	42	50	64	74	88	16	29	51	63	83	27	44	45	57	80
		65	43	31	39	53	65	84	-	19	40	53	78	-	25	26	38	69
			33	49	57	69	78	+	22	37	58	69	86	34	51	52	63	83
		61	43	39	47	60	71	87	13	26	47	60	82	16	32	34	46	74
			33	57	64	74	82	+	29	44	64	74	88	42	58	59	69	86
57	43	47	55	67	76	89	19	34	55	67	85	23	41	42	54	79		
	33	64	70	79	85	+	37	52	70	78	+	50	65	66	74	88		
53	43	56	62	73	80	+	27	43	63	73	88	31	50	51	62	83		
	33	70	75	83	88	+	46	60	76	83	+	58	71	72	79	+		
49	43	64	70	78	84	+	37	52	70	78	+	41	58	59	69	86		
	33	76	80	86	+	+	55	68	81	86	+	66	77	78	83	+		
45	43	71	76	83	88	+	47	61	76	83	+	51	67	68	76	89		
	33	81	85	89	+	+	64	75	85	89	+	73	82	82	87	+		
41	43	78	82	87	+	+	58	70	82	87	+	61	74	75	82	+		
	33	86	88	+	+	+	72	81	88	+	+	80	86	87	+	+		
36	43	85	87	+	+	+	70	79	88	+	+	73	82	83	87	+		
	33	+	+	+	+	+	81	87	+	+	+	86	+	+	+	+		
31	43	+	+	+	+	+	81	87	+	+	+	82	89	89	+	+		
	33	+	+	+	+	+	88	+	+	+	+	+	+	+	+	+		

+ = GREATER THAN 90% - = LESS THAN 10%

Didapatkan Ketinggian Tangannya saat memulai adalah 38.39 inchi (terletak diantara 33 inchi dan 43 inchi), Jarak membawanya adalah 7.61 Feet (terletak diantara 7 feet dan 14 feet), Frekuensi Membawanya 4 Jam Sekali (terletak diantara 5 menit dan 8 jam) dan Berat Beban adalah 40.08 pound (terletak diantara 36 pound dan 41 pound). Berikut ini merupakan hasil interpolasinya:

Untuk Berat Beban 41 pound, Jarak 14 feet, Ketinggian Tangan 43 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 87}{90 - x}$$

$$7.917(90 - x) = 4(3)$$

$$712.53 - 7.917x = 12$$

$$-7.917x = 12 - 712.53$$

$$x = \frac{700.53}{7.917} = 88.4843\%$$

Untuk Berat Beban 41 pound, Jarak 14 feet, Ketinggian Tangan 33 inchi: **90%**

Untuk Berat Beban 41 pound, Jarak 14 feet:

$$\frac{43 - 33}{43 - 38.39} = \frac{88.4843 - 90}{88.4843 - x}$$

$$10(88.4843 - x) = 4.61(-1.5157)$$

$$884.843 - 10x = -6.9874$$

$$-10x = -6.9874 - 884.843$$

$$x = \frac{891.8304}{10} = 89.183\%$$

Untuk Berat Beban 41 pound, Jarak 7 feet: **90%**

Untuk Berat Beban 41 pound:

$$\frac{14 - 7}{14 - 7.61} = \frac{89.183 - 90}{89.183 - x}$$

$$7(89.183 - x) = 6.39(-0.817)$$

$$624.281 - 7x = -5.2206$$

$$-7x = -5.2206 - 624.281$$

$$x = \frac{629.5016}{7} = 89.9288\%$$

Untuk Berat Beban 36 pound: **90%**

Interpolasi Akhir:

$$\frac{41 - 36}{41 - 40.08} = \frac{89.9288 - 90}{89.9288 - x}$$

$$5(89.9288 - x) = 0.92(-0.0712)$$

$$449.644 - 5x = -0.0655$$

$$-5x = -0.0655 - 449.644$$

$$x = \frac{449.7095}{5} = 89.9419\%$$

4. Untuk Gerakan Membawa (*Carrying*) Kardus berisi Potongan Kayu yang Sudah Dipotong dan Dilubangi dari Stasiun Gergaji Kecil dan *Drilling* menuju Stasiun Gerinda:

TABLE 11M - MALE POPULATION PERCENTAGES FOR CARRYING TASKS

CARRYING DISTANCE		7 FEET					14 FEET					28 FEET						
		15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h		
OBJECT WEIGHT (POUNDS)	HAND HEIGHT (INCHES)	99	43	-	-	-	18	50	-	-	-	-	36	-	-	-	-	22
		33	-	11	22	36	67	-	-	11	21	54	-	-	-	15	47	
		94	43	-	-	12	23	56	-	-	-	12	42	-	-	-	-	28
		33	-	15	28	42	71	-	-	15	27	60	-	-	11	20	53	
		89	43	-	-	17	29	62	-	-	-	17	49	-	-	-	-	34
		33	14	20	35	49	75	-	-	21	34	65	-	15	16	26	59	
		85	43	-	-	22	35	66	-	-	11	21	54	-	-	-	-	40
		33	18	25	40	54	78	-	-	26	39	70	-	19	20	32	64	
		81	43	-	14	27	41	70	-	-	15	27	60	-	-	-	14	46
		33	23	31	46	59	81	-	13	31	45	73	11	24	25	38	68	
		77	43	13	19	33	47	74	-	-	20	33	65	-	-	-	19	52
		33	29	37	52	64	84	-	17	38	51	77	15	30	31	44	73	
		73	43	18	25	40	53	78	-	-	26	39	69	-	13	14	25	58
		33	35	44	58	69	86	11	23	44	57	80	21	37	38	50	76	
		69	43	24	32	46	59	81	-	13	32	46	74	-	18	19	31	63
		33	42	50	64	74	88	16	29	51	63	83	27	44	45	57	80	
		65	43	31	39	53	65	84	-	19	40	53	78	-	25	26	38	69
		33	49	57	69	78	+	22	37	58	69	86	34	51	52	63	83	
		61	43	39	47	60	71	87	13	26	47	60	82	16	32	34	46	74
		33	57	64	74	82	+	29	44	64	74	88	42	58	59	69	86	
57	43	47	55	67	76	89	19	34	55	67	85	23	41	42	54	79		
33	64	70	79	85	+	37	52	70	78	+	50	65	66	74	88			
53	43	56	62	73	80	+	27	43	63	73	88	31	50	51	62	83		
33	70	75	83	88	+	46	60	76	83	+	58	71	72	79	+			
49	43	64	70	78	84	+	37	52	70	78	+	41	58	59	69	86		
33	76	80	86	+	+	55	68	81	86	+	66	77	78	83	+			
45	43	71	76	83	88	+	47	61	76	83	+	51	67	68	76	89		
33	81	85	89	+	+	64	75	85	89	+	73	82	82	87	+			
41	43	78	82	87	+	+	58	70	82	87	+	61	74	75	82	+		
36	33	86	88	+	+	+	72	81	88	+	+	80	86	87	+	+		
	43	85	87	+	+	+	70	79	88	+	+	73	82	83	87	+		
	33	+	+	+	+	+	81	87	+	+	+	86	+	+	+	+		
31	43	+	+	+	+	+	81	87	+	+	+	82	89	89	+	+		
	33	+	+	+	+	+	88	+	+	+	+	+	+	+	+	+		

+ = GREATER THAN 90% - = LESS THAN 10%

Didapatkan Ketinggian Tangannya saat memulai adalah 33.98 inchi (terletak diantara 33 inchi dan 43 inchi), Jarak membawanya adalah 8.77 Feet (terletak diantara 7 feet dan 14 feet), Frekuensi Membawanya 4 Jam Sekali (terletak diantara 5 menit dan 8 jam) dan Berat Beban adalah 39.21 pound (terletak diantara 36 pound dan 41 pound). Berikut ini merupakan hasil interpolasinya:

Untuk Berat Beban 41 pound, Jarak 14 feet, Ketinggian Tangan 43 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 87}{90 - x}$$

$$7.917(90 - x) = 4(3)$$

$$712.53 - 7.917x = 12$$

$$-7.917x = 12 - 712.53$$

$$x = \frac{700.53}{7.917} = 88.4843\%$$

Untuk Berat Beban 41 pound, Jarak 14 feet, Ketinggian Tangan 33 inchi: 90%

Untuk Berat Beban 41 pound, Jarak 14 feet:

$$\frac{43 - 33}{43 - 39.21} = \frac{88.4843 - 90}{88.4843 - x}$$

$$10(88.4843 - x) = 3.79(-1.5157)$$

$$884.843 - 10x = -5.7445$$

$$-10x = -5.7445 - 884.843$$

$$x = \frac{890.5875}{10} = 89.0588\%$$

Untuk Berat Beban 41 pound, Jarak 7 feet: 90%

Untuk Berat Beban 41 pound:

$$\frac{14 - 7}{14 - 8.77} = \frac{89.0588 - 90}{89.0588 - x}$$

$$7(89.0588 - x) = 5.23(-0.9412)$$

$$623.4116 - 7x = -4.9225$$

$$-7x = -4.9225 - 623.4116$$

$$x = \frac{628.3341}{7} = 89.762\%$$

Untuk Berat Beban 36 pound: 90%

Interpolasi Akhir:

$$\frac{41 - 36}{41 - 39.21} = \frac{89.762 - 90}{89.762 - x}$$

$$5(89.762 - x) = 1.79(-0.238)$$

$$448.81 - 5x = -0.426$$

$$-5x = -0.426 - 448.81$$

$$x = \frac{449.236}{5} = 89.8472\%$$

5. Untuk Gerakan Membawa (*Carrying*) Kardus berisi Potongan Kayu yang Sudah Gerinda dari Stasiun Gerinda menuju Stasiun Pola:

TABLE 11M - MALE POPULATION PERCENTAGES FOR CARRYING TASKS

CARRYING DISTANCE		7 FEET					14 FEET					28 FEET					
FREQUENCY ONE CARRY EVERY		15s	30s	1m	5m	8h	15s	30s	1m	5m	8h	15s	30s	1m	5m	8h	
OBJECT WEIGHT (POUNDS)	99	43	-	-	18	50	-	-	-	-	36	-	-	-	-	22	
		33	-	11	22	36	67	-	-	11	21	54	-	-	-	15	47
	94	43	-	-	12	23	56	-	-	-	12	42	-	-	-	-	28
		33	-	15	28	42	71	-	-	15	27	60	-	-	11	20	53
	89	43	-	-	17	29	62	-	-	-	17	49	-	-	-	-	34
		33	14	20	35	49	75	-	-	21	34	65	-	15	16	26	59
	85	43	-	-	22	35	66	-	-	11	21	54	-	-	-	-	40
		33	18	25	40	54	78	-	-	26	39	70	-	19	20	32	64
	81	43	-	14	27	41	70	-	-	15	27	60	-	-	-	14	46
		33	23	31	46	59	81	-	13	31	45	73	11	24	25	38	68
	77	43	13	19	33	47	74	-	-	20	33	65	-	-	-	19	52
		33	29	37	52	64	84	-	17	38	51	77	15	30	31	44	73
	73	43	18	25	40	53	78	-	-	26	39	69	-	13	14	25	58
		33	35	44	58	69	86	11	23	44	57	80	21	37	38	50	76
	69	43	24	32	46	59	81	-	13	32	46	74	-	18	19	31	63
		33	42	50	64	74	88	16	29	51	63	83	27	44	45	57	80
	65	43	31	39	53	65	84	-	19	40	53	78	-	25	26	38	69
		33	49	57	69	78	+	22	37	58	69	86	34	51	52	63	83
	61	43	39	47	60	71	87	13	26	47	60	82	16	32	34	46	74
		33	57	64	74	82	+	29	44	64	74	88	42	58	59	69	86
57	43	47	55	67	76	89	19	34	55	67	85	23	41	42	54	79	
	33	64	70	79	85	+	37	52	70	78	+	50	65	66	74	88	
53	43	56	62	73	80	+	27	43	63	73	88	31	50	51	62	83	
	33	70	75	83	88	+	46	60	76	83	+	58	71	72	79	+	
49	43	64	70	78	84	+	37	52	70	78	+	41	58	59	69	86	
	33	76	80	86	+	+	55	68	81	86	+	66	77	78	83	+	
45	43	71	76	83	88	+	47	61	76	83	+	51	67	68	76	89	
	33	81	85	89	+	+	64	75	85	89	+	73	82	82	87	+	
41	43	78	82	87	+	+	58	70	82	87	+	61	74	75	82	+	
	33	86	88	+	+	+	72	81	88	+	+	80	86	87	+	+	
36	43	85	87	+	+	+	70	79	88	+	+	73	82	83	87	+	
	33	+	+	+	+	+	81	87	+	+	+	86	+	+	+	+	
31	43	+	+	+	+	+	81	87	+	+	+	82	89	89	+	+	
	33	+	+	+	+	+	88	+	+	+	+	+	+	+	+	+	

+ = GREATER THAN 90% - = LESS THAN 10%

Didapatkan Ketinggian Tangannya saat memulai adalah 35.71 inchi (terletak diantara 33 inchi dan 43 inchi), Jarak membawanya adalah 20.34 Feet (terletak diantara 14 feet dan 28 feet), Frekuensi Membawanya 4 Jam Sekali (terletak diantara 5 menit dan 8 jam) dan Berat Beban adalah 43.61 pound (terletak diantara 41 pound dan 45 pound). Berikut ini merupakan hasil interpolasinya:

Untuk Berat Beban 45 pound, Jarak 14 feet, Ketinggian Tangan 43 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{89 - 76}{89 - x}$$

$$7.917(89 - x) = 4(13)$$

$$704.613 - 7.917x = 52$$

$$-7.917x = 52 - 704.613$$

$$x = \frac{652.613}{7.917} = 82.4319\%$$

Untuk Berat Beban 45 pound, Jarak 14 feet, Ketinggian Tangan 33 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 87}{90 - x}$$

$$7.917(90 - x) = 4(3)$$

$$712.53 - 7.917x = 12$$

$$-7.917x = 12 - 712.53$$

$$x = \frac{700.53}{7.917} = 88.4843\%$$

Untuk Berat Beban 45 pound, Jarak 7 feet, Ketinggian Tangan 43 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 83}{90 - x}$$

$$7.917(90 - x) = 4(7)$$

$$712.53 - 7.917x = 28$$

$$-7.917x = 28 - 712.53$$

$$x = \frac{684.53}{7.917} = 86.4633\%$$

Untuk Berat Beban 45 pound, Jarak 7 feet, Ketinggian Tangan 33 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 89}{90 - x}$$

$$7.917(90 - x) = 4(1)$$

$$712.53 - 7.917x = 4$$

$$-7.917x = 4 - 712.53$$

$$x = \frac{708.53}{7.917} = 89.4948\%$$

Untuk Berat Beban 41 pound, Jarak 28 feet, Ketinggian Tangan 43 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 82}{90 - x}$$

$$7.917(90 - x) = 4(8)$$

$$712.53 - 7.917x = 32$$

$$-7.917x = 32 - 712.53$$

$$x = \frac{680.53}{7.917} = 85.9581\%$$

Untuk Berat Beban 41 pound, Jarak 28 feet, Ketinggian Tangan 33 inchi: 90%

Untuk Berat Beban 41 pound, Jarak 14 feet, Ketinggian Tangan 43 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 87}{90 - x}$$

$$7.917(90 - x) = 4(3)$$

$$712.53 - 7.917x = 12$$

$$-7.917x = 12 - 712.53$$

$$x = \frac{700.53}{7.917} = 88.4843\%$$

Untuk Berat Beban 41 pound, Jarak 14 feet, Ketinggian Tangan 33 inchi: 90%

Untuk Berat Beban 45 pound, Jarak 28 feet:

$$\frac{43 - 33}{43 - 35.71} = \frac{82.4319 - 88.4843}{82.4319 - x}$$

$$10(82.4319 - x) = 7.29(-6.0524)$$

$$824.319 - 10x = -44.122$$

$$-10x = -44.122 - 824.319$$

$$x = \frac{868.441}{10} = 86.8441\%$$

Untuk Berat Beban 45 pound, Jarak 14 feet:

$$\frac{43 - 33}{43 - 35.71} = \frac{86.4633 - 89.4948}{86.4633 - x}$$

$$10(86.4633 - x) = 7.29(-3.0315)$$

$$864.633 - 10x = -22.0996$$

$$-10x = -22.0996 - 864.633$$

$$x = \frac{886.7326}{10} = 88.6733\%$$

Untuk Berat Beban 41 pound, Jarak 28 feet:

$$\frac{43 - 33}{43 - 35.71} = \frac{85.9581 - 90}{85.9581 - x}$$

$$10(85.9581 - x) = 7.29(-4.0419)$$

$$859.581 - 10x = -29.4655$$

$$-10x = -29.4655 - 859.581$$

$$x = \frac{889.0465}{10} = 88.9047\%$$

Untuk Berat Beban 41 pound, Jarak 14 feet:

$$\frac{43 - 33}{43 - 35.71} = \frac{88.4843 - 90}{88.4843 - x}$$

$$10(88.4843 - x) = 7.29(-1.5157)$$

$$884.843 - 10x = -11.0495$$

$$-10x = -11.0495 - 884.843$$

$$x = \frac{895.8925}{10} = 89.5893\%$$

Untuk Berat Beban 45 pound:

$$\frac{28 - 14}{28 - 20.34} = \frac{86.8441 - 88.6733}{86.8441 - x}$$

$$14(86.8441 - x) = 7.66(-1.8292)$$

$$1215.8174 - 14x = -14.0117$$

$$-14x = -14.0117 - 1215.8174$$

$$x = \frac{1229.8291}{14} = 87.8449\%$$

Untuk Berat Beban 41 pound:

$$\frac{28 - 14}{28 - 20.34} = \frac{88.9047 - 89.5893}{88.9047 - x}$$

$$14(88.9047 - x) = 7.66(-0.6846)$$

$$1244.6658 - 14x = -5.244$$

$$-14x = -5.244 - 1244.6658$$

$$x = \frac{1249.9098}{14} = 89.2793\%$$

Interpolasi Akhir:

$$\frac{45 - 41}{45 - 43.61} = \frac{87.8449 - 89.2793}{87.8449 - x}$$

$$4(87.8449 - x) = 1.39(-1.4344)$$

$$351.3796 - 4x = -1.9938$$

$$-4x = -1.9938 - 351.3796$$

$$x = \frac{353.3734}{4} = 88.3434\%$$

6. Untuk Gerakan Mendorong (*Pushing*) Gerobak Dorong dengan Kardus berisi Mainan Pola dari Stasiun Pola menuju Stasiun Cat Semprot:

TABLE 8M - MALE POPULATION PERCENTAGES FOR PUSHING TASKS
SUSTAINED FORCE

SUSTAINED PUSHING FORCE (POUNDS)		HAND HEIGHT (INCHES)	PUSHING DISTANCE		7 FEET					25 FEET					50 FEET				
			FREQUENCY		30s	1m	5m	30m	8h	30s	1m	5m	30m	8h	30s	1m	5m	30m	8h
			ONE PUSH EVERY																
105	57	57	-	-	-	-	23	-	-	-	-	-	-	-	-	-	-	-	
		37	-	-	-	11	28	-	-	-	-	-	-	-	-	-	-	-	
		25	-	-	-	-	27	-	-	-	-	-	-	-	-	-	-	-	
100	57	57	-	-	-	12	29	-	-	-	-	11	-	-	-	-	-	-	
		37	-	-	12	15	34	-	-	-	-	-	-	-	-	-	-	-	
		25	-	-	11	14	32	-	-	-	-	-	-	-	-	-	-	-	
95	57	57	-	-	13	16	35	-	-	-	-	16	-	-	-	-	-	-	
		37	-	-	17	20	40	-	-	-	-	14	-	-	-	-	-	-	
		25	-	-	16	19	39	-	-	-	-	11	-	-	-	-	-	-	
90	57	57	-	-	18	22	42	-	-	-	-	21	-	-	-	-	-	-	
		37	-	-	22	26	47	-	-	-	-	20	-	-	-	-	-	-	
		25	-	-	21	25	45	-	-	-	-	16	-	-	-	-	-	-	
85	57	57	-	-	24	28	49	-	-	-	11	27	-	-	-	-	-	-	
		37	-	13	29	33	53	-	-	-	-	26	-	-	-	-	-	-	
		25	-	12	28	32	52	-	-	-	-	22	-	-	-	-	-	-	
80	57	57	-	14	31	36	56	-	-	13	16	36	-	-	-	-	-	13	
		37	-	18	36	41	60	-	-	12	15	33	-	-	-	-	-	12	
		25	-	17	35	39	59	-	-	-	12	29	-	-	-	-	-	-	
75	57	57	-	21	39	44	63	-	-	19	23	43	-	-	-	-	-	19	
		37	13	25	44	49	67	-	-	18	21	41	-	-	-	-	-	18	
		25	12	24	43	47	66	-	-	14	17	37	-	-	-	-	-	14	
70	57	57	16	29	48	52	69	-	11	27	31	51	-	-	12	15	26	26	
		37	20	33	53	57	72	-	-	25	29	50	-	-	12	14	24	24	
		25	19	32	52	55	72	-	-	21	25	45	-	-	-	-	11	20	
65	57	57	23	38	57	60	75	-	18	36	40	50	-	-	19	23	34	34	
		37	28	43	61	64	78	-	16	34	38	58	-	-	18	22	33	33	
		25	27	42	60	63	77	-	13	29	34	54	-	-	14	18	29	29	
60	57	57	33	48	65	68	80	-	26	46	50	67	-	-	12	28	33	43	
		37	38	52	69	71	82	-	25	44	48	66	-	-	11	27	31	42	
		25	37	51	68	71	82	-	21	39	44	63	-	-	23	26	37	37	
55	57	57	44	58	72	75	85	11	37	56	60	75	-	-	20	39	43	53	
		37	49	62	76	78	86	14	36	55	58	74	-	-	19	38	42	52	
		25	47	61	75	77	86	13	31	50	54	71	-	-	15	33	37	47	
50	57	57	55	67	79	81	88	20	49	66	69	81	-	-	32	51	55	62	
		37	59	71	82	83	91	23	47	65	68	80	-	-	30	50	53	61	
		25	58	70	81	83	89	23	43	61	64	78	-	-	25	45	49	57	
45	57	57	66	76	85	86	91	32	61	75	77	86	15	45	62	66	71	71	
		37	70	78	86	88	94	36	59	74	76	85	19	43	61	65	70	70	
		25	69	78	86	87	93	35	55	71	73	84	20	38	57	61	67	67	
40	57	57	76	83	89	91	94	47	72	82	84	91	28	58	73	76	79	79	
		37	78	85	91	92	96	50	71	81	83	90	33	57	72	75	78	78	
		25	78	84	91	92	96	50	67	79	81	88	34	53	69	72	75	75	
35	57	57	84	88	91	92	96	62	81	88	89	94	44	71	82	83	85	85	
		37	85	91	92	93	97	65	80	87	89	94	49	70	81	83	85	85	
		25	85	89	91	92	96	65	78	86	87	92	50	67	79	81	83	83	
30	57	57	91	92	93	94	97	75	88	91	92	97	62	82	88	89	91	91	
		37	91	92	93	94	97	77	87	91	92	96	66	81	88	89	91	91	
		25	91	92	93	94	97	77	86	91	92	96	67	79	87	88	88	88	
25	57	57	91	92	93	94	97	86	91	92	93	97	77	89	91	92	93	93	
		37	91	92	93	94	97	87	91	92	93	96	80	89	91	92	93	93	
		25	91	92	93	94	97	87	91	92	93	96	80	88	91	92	93	93	
20	57	57	91	92	93	94	97	91	92	93	94	97	88	91	92	93	94	94	
		37	91	92	93	94	97	91	92	93	94	96	91	92	93	94	95	95	
		25	91	92	93	94	97	91	92	93	94	96	91	92	93	94	95	95	

+ = GREATER THAN 90% - = LESS THAN 10%

Didapatkan Ketinggian Tangannya saat memulai adalah 44.29 inchi (terletak diantara 37 inchi dan 57 inchi), Jarak mendorongnya adalah 31.99 Feet (terletak diantara 25 feet dan 50 feet), Frekuensi Mendorongnya 8 Jam Sekali dan Gaya Berkelanjutan yang digunakan untuk mendorong beban yang ada adalah 63.44 pound (terletak diantara 60 pound dan 65 pound). Berikut ini merupakan hasil interpolasinya:

Untuk Gaya Berkelanjutan 65 pound, Jarak 25 Feet:

$$\frac{57 - 37}{57 - 44.29} = \frac{60 - 58}{60 - x}$$

$$20(60 - x) = 12.71(2)$$

$$1200 - 20x = 25.42$$

$$-20x = 25.42 - 1200$$

$$x = \frac{1174.58}{20} = 58.729\%$$

Untuk Gaya Berkelanjutan 65 pound, Jarak 50 Feet:

$$\frac{57 - 37}{57 - 44.29} = \frac{34 - 33}{34 - x}$$

$$20(34 - x) = 12.71(1)$$

$$680 - 20x = 12.71$$

$$-20x = 12.71 - 680$$

$$x = \frac{667.29}{20} = 33.3645\%$$

Untuk Gaya Berkelanjutan 60 pound, Jarak 25 Feet:

$$\frac{57 - 37}{57 - 44.29} = \frac{67 - 66}{67 - x}$$

$$20(67 - x) = 12.71(1)$$

$$1340 - 20x = 12.71$$

$$-20x = 12.71 - 1340$$

$$x = \frac{1327.29}{20} = 66.3645\%$$

Untuk Gaya Berkelanjutan 60 pound, Jarak 50 Feet:

$$\frac{57 - 37}{57 - 44.29} = \frac{43 - 42}{43 - x}$$

$$20(43 - x) = 12.71(1)$$

$$860 - 20x = 12.71$$

$$-20x = 12.71 - 860$$

$$x = \frac{847.29}{20} = 42.3645\%$$

Untuk Gaya Berkelanjutan 65 pound:

$$\frac{50 - 25}{50 - 31.99} = \frac{33.3645 - 58.729}{33.3645 - x}$$

$$25(33.3645 - x) = 18.01(-25.3645)$$

$$834.1125 - 25x = -456.8146$$

$$-25x = -456.8146 - 834.1125$$

$$x = \frac{1290.9271}{25} = 51.6371\%$$

Untuk Gaya Berkelanjutan 60 pound:

$$\frac{50 - 25}{50 - 31.99} = \frac{42.3645 - 66.3645}{42.3645 - x}$$

$$25(42.3645 - x) = 18.01(-24)$$

$$1059.1125 - 25x = -432.24$$

$$-25x = -432.24 - 1059.1125$$

$$x = \frac{1491.3525}{25} = 59.6541\%$$

Interpolasi Akhir:

$$\frac{65 - 60}{65 - 63.44} = \frac{51.6371 - 59.6541}{51.6371 - x}$$

$$5(51.6371 - x) = 1.56(-8.017)$$

$$258.1855 - 5x = -12.5065$$

$$-5x = -12.5065 - 258.1855$$

$$x = \frac{270.692}{5} = 54.1384\%$$

7. Untuk Gerakan Mendorong (*Pushing*) Gerobak Dorong dengan Kardus berisi Mainan *Puzzle* dari Stasiun Press menuju Stasiun Cat Kuas:

TABLE 8M - MALE POPULATION PERCENTAGES FOR PUSHING TASKS
SUSTAINED FORCE

PUSHING DISTANCE		7 FEET					25 FEET					50 FEET					
		30s	1m	5m	30m	8h	30s	1m	5m	30m	8h	30s	1m	5m	30m	8h	
SUSTAINED PUSHING FORCE (POUNDS)	105	57	-	-	-	23	-	-	-	-	-	-	-	-	-	-	-
		37	-	-	-	11	28	-	-	-	-	-	-	-	-	-	-
		25	-	-	-	-	27	-	-	-	-	-	-	-	-	-	-
	100	57	-	-	-	12	29	-	-	-	-	11	-	-	-	-	-
		37	-	-	-	12	15	34	-	-	-	-	-	-	-	-	-
		25	-	-	-	11	14	32	-	-	-	-	-	-	-	-	-
	95	57	-	-	-	13	16	35	-	-	-	-	16	-	-	-	-
		37	-	-	-	17	20	40	-	-	-	-	14	-	-	-	-
		25	-	-	-	16	19	39	-	-	-	-	11	-	-	-	-
	90	57	-	-	-	18	22	42	-	-	-	-	21	-	-	-	-
		37	-	-	-	22	26	47	-	-	-	-	20	-	-	-	-
		25	-	-	-	21	25	45	-	-	-	-	16	-	-	-	-
	85	57	-	-	-	24	28	49	-	-	-	11	27	-	-	-	-
		37	-	-	-	13	29	33	53	-	-	-	26	-	-	-	-
		25	-	-	-	12	28	32	52	-	-	-	22	-	-	-	-
	80	57	-	-	-	14	31	36	56	-	-	13	16	35	-	-	13
		37	-	-	-	18	36	41	60	-	-	12	15	33	-	-	12
		25	-	-	-	17	35	39	59	-	-	-	12	29	-	-	-
	75	57	-	-	-	21	39	44	63	-	-	19	23	43	-	-	19
		37	-	-	-	13	25	44	49	67	-	-	18	21	41	-	18
		25	-	-	-	12	24	43	47	66	-	-	14	17	37	-	14
	70	57	-	-	-	16	29	48	52	69	-	-	11	27	31	51	-
		37	-	-	-	20	33	53	57	72	-	-	25	29	50	-	24
		25	-	-	-	19	32	52	55	72	-	-	21	25	45	-	20
65	57	-	-	-	23	38	57	60	75	-	-	18	36	40	60	34	
	37	-	-	-	28	43	61	64	78	-	-	16	34	38	58	33	
	25	-	-	-	27	42	60	63	77	-	-	13	29	34	54	28	
60	57	-	-	-	33	48	65	68	80	-	-	26	46	50	67	43	
	37	-	-	-	38	52	69	71	82	-	-	25	44	48	66	42	
	25	-	-	-	37	51	68	71	82	-	-	21	39	44	61	37	
55	57	-	-	-	44	58	72	75	85	-	-	11	37	56	60	75	
	37	-	-	-	49	62	76	78	86	-	-	14	36	55	58	74	
	25	-	-	-	47	61	75	77	85	-	-	13	31	50	54	71	
50	57	-	-	-	55	67	79	81	88	-	-	20	49	66	69	81	
	37	-	-	-	59	71	82	83	89	-	-	23	47	65	68	80	
	25	-	-	-	58	70	81	83	89	-	-	23	43	61	64	78	
45	57	-	-	-	66	76	85	86	90	-	-	32	61	75	77	86	
	37	-	-	-	70	78	86	88	92	-	-	36	59	74	76	85	
	25	-	-	-	69	78	86	87	91	-	-	35	55	71	73	84	
40	57	-	-	-	76	83	89	90	94	-	-	47	72	82	84	91	
	37	-	-	-	78	85	90	91	95	-	-	50	71	81	83	90	
	25	-	-	-	78	84	90	91	94	-	-	50	67	79	81	88	
35	57	-	-	-	84	88	92	93	96	-	-	62	81	88	89	94	
	37	-	-	-	85	90	93	94	97	-	-	65	80	87	89	93	
	25	-	-	-	85	89	92	93	96	-	-	65	78	86	87	92	
30	57	-	-	-	90	92	94	95	97	-	-	75	88	91	92	95	
	37	-	-	-	90	92	94	95	97	-	-	77	87	90	91	94	
	25	-	-	-	90	92	94	95	97	-	-	77	86	89	90	93	
25	57	-	-	-	95	96	97	98	99	-	-	85	92	94	95	98	
	37	-	-	-	95	96	97	98	99	-	-	87	91	93	94	97	
	25	-	-	-	95	96	97	98	99	-	-	87	90	92	93	96	
20	57	-	-	-	98	99	99	100	100	-	-	95	97	98	99	100	
	37	-	-	-	98	99	99	100	100	-	-	95	97	98	99	100	
	25	-	-	-	98	99	99	100	100	-	-	95	97	98	99	100	

+ = GREATER THAN 90% - = LESS THAN 10%

Didapatkan Ketinggian Tangannya saat memulai adalah 44.29 inci (terletak diantara 37 inci dan 57 inci), Jarak mendorongnya adalah 19.36 Feet (terletak diantara 7 feet dan 25 feet), Frekuensi Mendorongnya 8 Jam Sekali dan Gaya Berkelanjutan yang digunakan untuk mendorong beban yang ada adalah 58.81 pound (terletak diantara 55 pound dan 60 pound). Berikut ini merupakan hasil interpolasinya:

Untuk Gaya Berkelanjutan 60 pound, Jarak 25 Feet:

$$\frac{57 - 37}{57 - 44.29} = \frac{67 - 66}{67 - x}$$

$$20(67 - x) = 12.71(1)$$

$$1340 - 20x = 12.71$$

$$-20x = 12.71 - 1340$$

$$x = \frac{1327.29}{20} = 66.3645\%$$

Untuk Gaya Berkelanjutan 60 pound, Jarak 7 Feet:

$$\frac{57 - 37}{57 - 44.29} = \frac{80 - 82}{80 - x}$$

$$20(80 - x) = 12.71(-2)$$

$$1600 - 20x = -25.42$$

$$-20x = -25.42 - 1600$$

$$x = \frac{1625.42}{20} = 81.271\%$$

Untuk Gaya Berkelanjutan 55 pound, Jarak 25 Feet:

$$\frac{57 - 37}{57 - 44.29} = \frac{75 - 74}{75 - x}$$

$$20(75 - x) = 12.71(1)$$

$$1500 - 20x = 12.71$$

$$-20x = 12.71 - 1500$$

$$x = \frac{1512.71}{20} = 75.6355\%$$

Untuk Gaya Berkelanjutan 55 pound, Jarak 7 Feet:

$$\frac{57 - 37}{57 - 44.29} = \frac{85 - 86}{85 - x}$$

$$20(85 - x) = 12.71(-1)$$

$$1700 - 20x = -12.71$$

$$-20x = -12.71 - 1700$$

$$x = \frac{1712.71}{20} = 85.6355\%$$

Untuk Gaya Berkelanjutan 60 pound:

$$\frac{25 - 7}{25 - 19.36} = \frac{66.3645 - 81.271}{66.3645 - x}$$

$$18(66.3645 - x) = 5.64(-14.9065)$$

$$1194.561 - 18x = -84.0727$$

$$-18x = -84.0727 - 1194.561$$

$$x = \frac{1278.6337}{18} = 71.0352\%$$

Untuk Gaya Berkelanjutan 55 pound:

$$\frac{25 - 7}{25 - 19.36} = \frac{75.6355 - 85.6355}{75.6355 - x}$$

$$18(75.6355 - x) = 5.64(-10)$$

$$1361.439 - 18x = -56.4$$

$$-18x = -56.4 - 1361.439$$

$$x = \frac{1417.839}{18} = 78.7688\%$$

Interpolasi Akhir:

$$\frac{60 - 55}{60 - 58.81} = \frac{71.0352 - 78.7688}{71.0352 - x}$$

$$5(71.0352 - x) = 1.19(-7.7336)$$

$$355.176 - 5x = -9.203$$

$$-5x = -9.203 - 355.176$$

$$x = \frac{364.379}{5} = 72.8758\%$$

8. Untuk Gerakan Mendorong (*Pushing*) Gerobak Dorong dengan Kardus berisi Mainan Pola dan *Puzzle* dari Stasiun Cat Semprot menuju Stasiun *Packaging*:

TABLE 8M - MALE POPULATION PERCENTAGES FOR PUSHING TASKS
SUSTAINED FORCE

SUSTAINED PUSHING FORCE (POUNDS)	HAND HEIGHT (INCHES)	PUSHING DISTANCE		7 FEET					25 FEET					50 FEET				
		FREQUENCY ONE PUSH EVERY		30s	1m	5m	30m	8h	30s	1m	5m	30m	8h	30s	1m	5m	30m	8h
				57	-	-	-	-	23	-	-	-	-	-	-	-	-	-
105		37	-	-	-	11	28	-	-	-	-	-	-	-	-	-	-	
		25	-	-	-	14	27	-	-	-	-	-	-	-	-	-	-	
		57	-	-	-	12	29	-	-	-	-	11	-	-	-	-	-	
100		37	-	-	12	15	34	-	-	-	-	-	-	-	-	-	-	
		25	-	-	11	14	32	-	-	-	-	-	-	-	-	-	-	
		57	-	-	13	16	35	-	-	-	-	16	-	-	-	-	-	
95		37	-	-	17	20	40	-	-	-	-	14	-	-	-	-	-	
		25	-	-	16	19	39	-	-	-	-	11	-	-	-	-	-	
		57	-	-	18	22	42	-	-	-	-	21	-	-	-	-	-	
90		37	-	-	22	26	47	-	-	-	-	20	-	-	-	-	-	
		25	-	-	21	25	45	-	-	-	-	16	-	-	-	-	-	
		57	-	-	24	28	49	-	-	-	11	27	-	-	-	-	-	
85		37	-	13	29	33	53	-	-	-	-	26	-	-	-	-	-	
		25	-	12	28	32	52	-	-	-	-	22	-	-	-	-	-	
		57	-	14	31	36	56	-	-	13	16	35	-	-	-	-	13	
80		37	-	18	36	41	60	-	-	12	15	33	-	-	-	-	12	
		25	-	17	35	39	59	-	-	-	12	29	-	-	-	-	-	
		57	-	21	39	44	63	-	-	19	23	43	-	-	-	-	19	
75		37	13	25	44	49	67	-	-	18	21	41	-	-	-	-	18	
		25	12	24	43	47	66	-	-	14	17	37	-	-	-	-	14	
		57	16	29	48	52	69	-	11	27	31	51	-	-	12	15	26	
70		37	20	33	53	57	72	-	-	25	29	50	-	-	12	14	24	
		25	19	32	52	55	72	-	-	21	25	45	-	-	-	11	20	
		57	23	38	57	60	75	-	18	36	40	60	-	-	19	23	34	
65		37	28	43	61	64	78	-	16	34	38	58	-	-	18	22	33	
		25	27	42	60	63	77	-	13	29	34	54	-	-	14	18	28	
		57	33	48	65	68	80	-	26	46	50	67	-	12	28	33	43	
60		37	38	52	69	71	82	-	25	44	48	66	-	11	27	31	42	
		25	37	51	68	71	82	-	21	39	44	63	-	-	23	26	37	
		57	44	58	72	75	85	11	37	56	60	75	-	20	39	43	53	
55		37	49	62	76	78	86	14	36	55	58	74	-	19	38	42	52	
		25	47	61	75	77	86	13	31	50	54	71	-	15	33	37	47	
		57	55	67	79	81	88	20	49	66	69	81	-	32	51	55	62	
50		37	59	71	82	83	89	23	47	65	68	80	-	30	50	53	61	
		25	58	70	81	83	89	23	43	61	64	78	-	25	45	49	57	
		57	66	76	85	86	88	32	61	75	77	86	15	45	62	66	71	
45		37	70	78	86	88	88	36	59	74	76	85	19	43	61	65	70	
		25	69	78	86	87	87	35	55	71	73	84	20	38	57	61	67	
		57	76	83	89	89	89	47	72	82	84	84	28	58	73	76	79	
40		37	78	85	88	88	88	50	71	81	83	83	33	57	72	75	78	
		25	78	84	88	88	88	50	67	79	81	88	34	53	69	72	75	
		57	84	88	88	88	88	62	81	88	89	89	44	71	82	83	85	
35		37	85	88	88	88	88	65	80	87	89	89	49	70	81	83	85	
		25	85	89	88	88	88	65	78	86	87	87	50	67	79	81	83	
		57	88	88	88	88	88	75	88	88	88	88	62	82	88	89	89	
30		37	88	88	88	88	88	77	87	88	88	88	66	81	88	89	89	
		25	88	88	88	88	88	77	86	88	88	88	67	79	87	88	88	
		57	88	88	88	88	88	86	88	88	88	88	77	89	88	88	88	
25		37	88	88	88	88	88	87	88	88	88	88	80	89	88	88	88	
		25	88	88	88	88	88	87	88	88	88	88	80	88	88	88	88	
		57	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	
20		37	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	
		25	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	
		57	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	

+ = GREATER THAN 90% - = LESS THAN 10%

Didapatkan Ketinggian Tangannya saat memulai adalah 44.29 inchi (terletak diantara 37 inchi dan 57 inchi), Jarak mendorongnya adalah 33.3 Feet (terletak diantara 25 feet dan 50 feet), Frekuensi Mendorongnya 4 Jam Sekali (terletak diantara 30 menit dan 8 jam) dan Gaya Berkelanjutan yang digunakan untuk mendorong beban yang ada adalah 40.97 pound (terletak diantara 40 pound dan 45 pound). Berikut ini merupakan hasil interpolasinya:

Untuk Gaya Berkelanjutan 45 pound, Jarak 50 Feet, Ketinggian Tangan 57:

$$\frac{8 - 0.5}{8 - 4} = \frac{71 - 66}{71 - x}$$

$$7.5(71 - x) = 4(5)$$

$$532.5 - 7.5x = 20$$

$$-7.5x = 20 - 532.5$$

$$x = \frac{512.5}{7.5} = 68.3333\%$$

Untuk Gaya Berkelanjutan 45 pound, Jarak 50 Feet, Ketinggian Tangan 37:

$$\frac{8 - 0.5}{8 - 4} = \frac{70 - 65}{70 - x}$$

$$7.5(70 - x) = 4(5)$$

$$525 - 7.5x = 20$$

$$-7.5x = 20 - 525$$

$$x = \frac{505}{7.5} = 67.3333\%$$

Untuk Gaya Berkelanjutan 45 pound, Jarak 25 Feet, Ketinggian Tangan 57:

$$\frac{8 - 0.5}{8 - 4} = \frac{86 - 77}{86 - x}$$

$$7.5(86 - x) = 4(9)$$

$$645 - 7.5x = 36$$

$$-7.5x = 36 - 645$$

$$x = \frac{609}{7.5} = 81.2\%$$

Untuk Gaya Berkelanjutan 45 pound, Jarak 25 Feet, Ketinggian Tangan 37:

$$\frac{8 - 0.5}{8 - 4} = \frac{85 - 76}{85 - x}$$

$$7.5(85 - x) = 4(9)$$

$$637.5 - 7.5x = 36$$

$$-7.5x = 36 - 637.5$$

$$x = \frac{601.5}{7.5} = 80.2\%$$

Untuk Gaya Berkelanjutan 40 pound, Jarak 50 Feet, Ketinggian Tangan 57:

$$\frac{8 - 0.5}{8 - 4} = \frac{79 - 76}{79 - x}$$

$$7.5(79 - x) = 4(3)$$

$$592.5 - 7.5x = 12$$

$$-7.5x = 12 - 592.5$$

$$x = \frac{580.5}{7.5} = 77.4\%$$

Untuk Gaya Berkelanjutan 40 pound, Jarak 50 Feet, Ketinggian Tangan 37:

$$\frac{8 - 0.5}{8 - 4} = \frac{78 - 75}{78 - x}$$

$$7.5(78 - x) = 4(3)$$

$$585 - 7.5x = 12$$

$$-7.5x = 12 - 585$$

$$x = \frac{573}{7.5} = 76.4\%$$

Untuk Gaya Berkelanjutan 40 pound, Jarak 50 Feet, Ketinggian Tangan 57:

$$\frac{8 - 0.5}{8 - 4} = \frac{90 - 84}{90 - x}$$

$$7.5(90 - x) = 4(6)$$

$$675 - 7.5x = 12$$

$$-7.5x = 12 - 675$$

$$x = \frac{663}{7.5} = 88.4\%$$

Untuk Gaya Berkelanjutan 40 pound, Jarak 25 Feet, Ketinggian Tangan 37:

$$\frac{8 - 0.5}{8 - 4} = \frac{90 - 83}{90 - x}$$

$$7.5(90 - x) = 4(7)$$

$$675 - 7.5x = 28$$

$$-7.5x = 28 - 675$$

$$x = \frac{647}{7.5} = 86.2667\%$$

Untuk Gaya Berkelanjutan 45 pound, Jarak 50 Feet:

$$\frac{57 - 37}{57 - 44.29} = \frac{68.3333 - 67.3333}{68.3333 - x}$$

$$20(68.3333 - x) = 12.71(1)$$

$$1366.666 - 20x = 12.71$$

$$-20x = 12.71 - 1366.666$$

$$x = \frac{1353.956}{20} = 67.6978\%$$

Untuk Gaya Berkelanjutan 45 pound, Jarak 25 Feet:

$$\frac{57 - 37}{57 - 44.29} = \frac{81.2 - 80.2}{81.2 - x}$$

$$20(81.2 - x) = 12.71(1)$$

$$1624 - 20x = 12.71$$

$$-20x = 12.71 - 1624$$

$$x = \frac{1611.29}{20} = 80.5645\%$$

Untuk Gaya Berkelanjutan 40 pound, Jarak 50 Feet:

$$\frac{57 - 37}{57 - 44.29} = \frac{77.4 - 76.4}{77.4 - x}$$

$$20(77.4 - x) = 12.71(1)$$

$$1548 - 20x = 12.71$$

$$-20x = 12.71 - 1548$$

$$x = \frac{1535.29}{20} = 76.7645\%$$

Untuk Gaya Berkelanjutan 40 pound, Jarak 25 Feet:

$$\frac{57 - 37}{57 - 44.29} = \frac{88.4 - 86.2667}{88.4 - x}$$

$$20(88.4 - x) = 12.71(2.1333)$$

$$1768 - 20x = 27.1142$$

$$-20x = 27.1142 - 1768$$

$$x = \frac{1740.8858}{20} = 87.0443\%$$

Untuk Gaya Berkelanjutan 45 pound:

$$\frac{50 - 25}{50 - 33.3} = \frac{67.6978 - 80.5645}{67.6978 - x}$$

$$25(67.6978 - x) = 16.7(-12.8673)$$

$$1692.445 - 25x = -214.8839$$

$$-25x = -214.8839 - 1692.445$$

$$x = \frac{1907.3289}{25} = 76.2932\%$$

Untuk Gaya Berkelanjutan 60 pound:

$$\frac{50 - 25}{50 - 33.3} = \frac{76.7645 - 87.0443}{76.7645 - x}$$

$$25(76.7645 - x) = 16.7(-10.2798)$$

$$1919.1125 - 25x = -171.6727$$

$$-25x = -171.6727 - 1919.1125$$

$$x = \frac{2090.7852}{25} = 83.6314\%$$

Interpolasi Akhir:

$$\frac{45 - 40}{45 - 40.97} = \frac{76.2932 - 83.6314}{76.2932 - x}$$

$$5(76.2932 - x) = 4.03(-7.3382)$$

$$381.466 - 5x = -29.5729$$

$$-5x = -29.5729 - 381.466$$

$$x = \frac{411.0389}{5} = 82.2078\%$$

9. Untuk Gerakan Mendorong (*Pushing*) Gerobak Dorong dengan Kardus berisi Mainan *Puzzle* dari Stasiun Cat Kuas menuju Stasiun *Packaging*:

TABLE 8M - MALE POPULATION PERCENTAGES FOR PUSHING TASKS
SUSTAINED FORCE

PUSHING DISTANCE		7 FEET					25 FEET					50 FEET									
		30s	1m	5m	30m	8h	30s	1m	5m	30m	8h	30s	1m	5m	30m	8h					
SUSTAINED PUSHING FORCE (POUNDS)	HAND HEIGHT (INCHES)	FREQUENCY ONE PUSH EVERY																			
		105	57	-	-	-	-	23	-	-	-	-	-	-	-	-	-	-	-	-	-
37	-			-	-	11	28	-	-	-	-	-	-	-	-	-	-	-	-	-	
25	-			-	-	-	27	-	-	-	-	-	-	-	-	-	-	-	-	-	
100	57	-	-	-	12	29	-	-	-	-	11	-	-	-	-	-	-	-	-	-	
		37	-	-	12	15	34	-	-	-	-	-	-	-	-	-	-	-	-	-	
		25	-	-	11	14	32	-	-	-	-	-	-	-	-	-	-	-	-	-	
95	57	-	-	13	16	35	-	-	-	-	16	-	-	-	-	-	-	-	-	-	
		37	-	-	17	20	40	-	-	-	-	14	-	-	-	-	-	-	-	-	
		25	-	-	16	19	39	-	-	-	-	11	-	-	-	-	-	-	-	-	
90	57	-	-	18	22	42	-	-	-	-	21	-	-	-	-	-	-	-	-	-	
		37	-	-	22	26	47	-	-	-	-	20	-	-	-	-	-	-	-	-	
		25	-	-	21	25	45	-	-	-	-	16	-	-	-	-	-	-	-	-	
85	57	-	-	24	28	49	-	-	-	11	27	-	-	-	-	-	-	-	-	-	
		37	-	13	29	33	53	-	-	-	26	-	-	-	-	-	-	-	-	-	
		25	-	12	28	32	52	-	-	-	22	-	-	-	-	-	-	-	-	-	
80	57	-	14	31	36	56	-	-	13	16	35	-	-	-	-	-	-	-	13	-	
		37	-	18	36	41	60	-	-	12	15	33	-	-	-	-	-	-	12	-	
		25	-	17	35	39	59	-	-	-	12	29	-	-	-	-	-	-	-	-	
75	57	-	21	39	44	63	-	-	19	23	43	-	-	-	-	-	-	-	19	-	
		37	13	25	44	49	67	-	-	18	21	41	-	-	-	-	-	-	18	-	
		25	12	24	43	47	66	-	-	14	17	37	-	-	-	-	-	-	14	-	
70	57	16	29	48	52	69	-	11	27	31	51	-	-	12	15	26	-	-	15	26	
		37	20	33	53	57	72	-	-	25	29	50	-	-	12	14	24	-	-	24	
		25	19	32	52	55	72	-	-	21	25	45	-	-	-	11	20	-	-	20	
65	57	23	38	57	60	75	-	18	36	40	60	-	-	19	23	34	-	-	23	34	
		37	28	43	61	64	78	-	16	34	38	58	-	-	18	22	33	-	-	33	
		25	27	42	60	63	77	-	13	29	34	54	-	-	14	18	28	-	-	28	
60	57	33	48	65	68	80	-	26	46	50	67	-	12	28	33	43	-	-	33	43	
		37	38	52	69	71	82	-	25	44	48	66	-	11	27	31	42	-	-	42	
		25	37	51	68	71	82	-	21	39	44	63	-	-	23	26	37	-	-	37	
55	57	44	58	72	75	85	11	37	56	60	75	-	20	39	43	53	-	-	43	53	
		37	49	62	76	78	86	14	36	55	58	74	-	19	38	42	52	-	-	52	
		25	47	61	75	77	86	13	31	50	54	71	-	15	33	37	47	-	-	47	
50	57	55	67	79	81	88	20	49	66	69	81	-	32	51	55	62	-	-	55	62	
		37	59	71	82	83	89	23	47	65	68	80	-	30	50	53	61	-	-	61	
		25	58	70	81	83	89	23	43	61	64	78	-	25	45	49	57	-	-	57	
45	57	66	76	85	86	+	32	61	75	77	86	15	45	62	66	71	-	-	66	71	
		37	70	78	86	88	+	36	59	74	76	85	19	43	61	65	70	-	-	70	
		25	69	78	86	87	+	35	55	71	73	84	20	38	57	61	67	-	-	67	
40	57	76	83	89	+	+	47	72	82	84	+	28	58	73	76	79	-	-	76	79	
		37	78	85	+	+	+	50	71	81	83	+	33	57	72	75	78	-	-	78	
		25	78	84	+	+	+	50	67	79	81	88	34	53	69	72	75	-	-	75	
35	57	84	88	+	+	+	62	81	88	89	+	44	71	82	83	85	-	-	83	85	
		37	85	+	+	+	+	65	80	87	89	+	49	70	81	83	85	-	-	85	
		25	85	89	+	+	+	65	78	86	87	+	50	67	79	81	83	-	-	83	
30	57	+	+	+	+	+	75	88	+	+	+	62	82	88	89	+	-	-	89	+	
		37	+	+	+	+	+	77	87	+	+	+	66	81	88	89	+	-	-	89	+
		25	+	+	+	+	+	77	86	+	+	+	67	79	87	88	88	-	-	88	88
25	57	+	+	+	+	+	86	+	+	+	+	77	89	+	+	+	-	-	+	+	
		37	+	+	+	+	+	87	+	+	+	+	80	89	+	+	+	-	-	+	+
		25	+	+	+	+	+	87	+	+	+	+	80	88	+	+	+	-	-	+	+
20	57	+	+	+	+	+	+	+	+	+	+	88	+	+	+	+	-	-	+	+	
		37	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	-	+	+	
		25	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	-	+	+

+ = GREATER THAN 90% - = LESS THAN 10%

Didapatkan Ketinggian Tangannya saat memulai adalah 44.29 inchi (terletak diantara 37 inchi dan 57 inchi), Jarak mendorongnya adalah 41.14 Feet (terletak diantara 25 feet dan 50 feet), Frekuensi Mendorongnya 4 Jam Sekali (terletak diantara 30 menit dan 8 jam) dan Gaya Berkelanjutan yang digunakan untuk mendorong beban yang ada adalah 41.63 pound (terletak diantara 40 pound dan 45 pound). Berikut ini merupakan hasil interpolasinya:

Untuk Gaya Berkelanjutan 45 pound, Jarak 50 Feet, Ketinggian Tangan 57:

$$\frac{8 - 0.5}{8 - 4} = \frac{71 - 66}{71 - x}$$

$$7.5(71 - x) = 4(5)$$

$$532.5 - 7.5x = 20$$

$$-7.5x = 20 - 532.5$$

$$x = \frac{512.5}{7.5} = 68.3333\%$$

Untuk Gaya Berkelanjutan 45 pound, Jarak 50 Feet, Ketinggian Tangan 37:

$$\frac{8 - 0.5}{8 - 4} = \frac{70 - 65}{70 - x}$$

$$7.5(70 - x) = 4(5)$$

$$525 - 7.5x = 20$$

$$-7.5x = 20 - 525$$

$$x = \frac{505}{7.5} = 67.3333\%$$

Untuk Gaya Berkelanjutan 45 pound, Jarak 25 Feet, Ketinggian Tangan 57:

$$\frac{8 - 0.5}{8 - 4} = \frac{86 - 77}{86 - x}$$

$$7.5(86 - x) = 4(9)$$

$$645 - 7.5x = 36$$

$$-7.5x = 36 - 645$$

$$x = \frac{609}{7.5} = 81.2\%$$

Untuk Gaya Berkelanjutan 45 pound, Jarak 25 Feet, Ketinggian Tangan 37:

$$\frac{8 - 0.5}{8 - 4} = \frac{85 - 76}{85 - x}$$

$$7.5(85 - x) = 4(9)$$

$$637.5 - 7.5x = 36$$

$$-7.5x = 36 - 637.5$$

$$x = \frac{601.5}{7.5} = 80.2\%$$

Untuk Gaya Berkelanjutan 40 pound, Jarak 50 Feet, Ketinggian Tangan 57:

$$\frac{8 - 0.5}{8 - 4} = \frac{79 - 76}{79 - x}$$

$$7.5(79 - x) = 4(3)$$

$$592.5 - 7.5x = 12$$

$$-7.5x = 12 - 592.5$$

$$x = \frac{580.5}{7.5} = 77.4\%$$

Untuk Gaya Berkelanjutan 40 pound, Jarak 50 Feet, Ketinggian Tangan 37:

$$\frac{8 - 0.5}{8 - 4} = \frac{78 - 75}{78 - x}$$

$$7.5(78 - x) = 4(3)$$

$$585 - 7.5x = 12$$

$$-7.5x = 12 - 585$$

$$x = \frac{573}{7.5} = 76.4\%$$

Untuk Gaya Berkelanjutan 40 pound, Jarak 50 Feet, Ketinggian Tangan 57:

$$\frac{8 - 0.5}{8 - 4} = \frac{90 - 84}{90 - x}$$

$$7.5(90 - x) = 4(6)$$

$$675 - 7.5x = 12$$

$$-7.5x = 12 - 675$$

$$x = \frac{663}{7.5} = 88.4\%$$

Untuk Gaya Berkelanjutan 40 pound, Jarak 25 Feet, Ketinggian Tangan 37:

$$\frac{8 - 0.5}{8 - 4} = \frac{90 - 83}{90 - x}$$

$$7.5(90 - x) = 4(7)$$

$$675 - 7.5x = 28$$

$$-7.5x = 28 - 675$$

$$x = \frac{647}{7.5} = 86.2667\%$$

Untuk Gaya Berkelanjutan 45 pound, Jarak 50 Feet:

$$\frac{57 - 37}{57 - 44.29} = \frac{68.3333 - 67.3333}{68.3333 - x}$$

$$20(68.3333 - x) = 12.71(1)$$

$$1366.666 - 20x = 12.71$$

$$-20x = 12.71 - 1366.666$$

$$x = \frac{1353.956}{20} = 67.6978\%$$

Untuk Gaya Berkelanjutan 45 pound, Jarak 25 Feet:

$$\frac{57 - 37}{57 - 44.29} = \frac{81.2 - 80.2}{81.2 - x}$$

$$20(81.2 - x) = 12.71(1)$$

$$1624 - 20x = 12.71$$

$$-20x = 12.71 - 1624$$

$$x = \frac{1611.29}{20} = 80.5645\%$$

Untuk Gaya Berkelanjutan 40 pound, Jarak 50 Feet:

$$\frac{57 - 37}{57 - 44.29} = \frac{77.4 - 76.4}{77.4 - x}$$

$$20(77.4 - x) = 12.71(1)$$

$$1548 - 20x = 12.71$$

$$-20x = 12.71 - 1548$$

$$x = \frac{1535.29}{20} = 76.7645\%$$

Untuk Gaya Berkelanjutan 40 pound, Jarak 25 Feet:

$$\frac{57 - 37}{57 - 44.29} = \frac{88.4 - 86.2667}{88.4 - x}$$

$$20(88.4 - x) = 12.71(2.1333)$$

$$1768 - 20x = 27.1142$$

$$-20x = 27.1142 - 1768$$

$$x = \frac{1740.8858}{20} = 87.0443\%$$

Untuk Gaya Berkelanjutan 40 pound:

$$\frac{50 - 25}{50 - 41.14} = \frac{67.6978 - 80.5645}{67.6978 - x}$$

$$25(67.6978 - x) = 8.86(-12.8667)$$

$$1692.445 - 25x = -113.999$$

$$-25x = -113.999 - 1692.445$$

$$x = \frac{1806.444}{25} = 72.2578\%$$

Untuk Gaya Berkelanjutan 60 pound:

$$\frac{50 - 25}{50 - 41.14} = \frac{76.7645 - 87.0443}{76.7645 - x}$$

$$25(76.7645 - x) = 8.86(-10.2798)$$

$$1919.1125 - 25x = -91.079$$

$$-25x = -91.079 - 1919.1125$$

$$x = \frac{2010.1915}{25} = 80.4077\%$$

Interpolasi Akhir:

$$\frac{45 - 40}{45 - 41.63} = \frac{72.2578 - 80.4077}{72.2578 - x}$$

$$5(72.2578 - x) = 3.37(-8.1499)$$

$$361.289 - 5x = -27.4652$$

$$-5x = -27.4652 - 361.289$$

$$x = \frac{388.7542}{5} = 77.7508\%$$

10. Untuk Gerakan Membawa (*Carrying*) Kardus berisi Potongan Kayu yang Sudah Gerinda dari Stasiun Gerinda menuju Stasiun *Press*:

TABLE 11M - MALE POPULATION PERCENTAGES FOR CARRYING TASKS

		CARRYING DISTANCE	7 FEET					14 FEET					28 FEET				
			15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h	15s	30 s	1m	5m	8h
OBJECT WEIGHT (POUNDS)	HAND HEIGHT (INCHES)	FREQUENCY															
		ONE CARRY EVERY															
99	43	43	-	-	-	18	50	-	-	-	-	36	-	-	-	-	22
		33	-	11	22	36	67	-	-	11	21	54	-	-	-	15	47
94	43	43	-	-	12	23	56	-	-	-	12	42	-	-	-	-	28
		33	-	15	28	42	71	-	-	15	27	60	-	-	11	20	53
89	43	43	-	-	17	29	62	-	-	-	17	49	-	-	-	-	34
		33	14	20	35	49	75	-	-	21	34	65	-	15	16	26	59
85	43	43	-	-	22	35	66	-	-	11	21	54	-	-	-	-	40
		33	18	25	40	54	78	-	-	26	39	70	-	19	20	32	64
81	43	43	-	14	27	41	70	-	-	15	27	60	-	-	-	14	46
		33	23	31	46	59	81	-	13	31	45	73	11	24	25	38	68
77	43	43	13	19	33	47	74	-	-	20	33	65	-	-	-	19	52
		33	29	37	52	64	84	-	17	38	51	77	15	30	31	44	73
73	43	43	18	25	40	53	78	-	-	26	39	69	-	13	14	25	58
		33	35	44	58	69	86	11	23	44	57	80	21	37	38	50	76
69	43	43	24	32	46	59	81	-	13	32	46	74	-	18	19	31	63
		33	42	50	64	74	88	16	29	51	63	83	27	44	45	57	80
65	43	43	31	39	53	66	84	-	19	40	53	78	-	25	26	38	69
		33	49	57	69	78	+	22	37	58	69	86	34	51	52	63	83
61	43	43	39	47	60	71	87	13	26	47	60	82	16	32	34	46	74
		33	57	64	74	82	+	29	44	64	74	88	42	58	59	69	86
57	43	43	47	55	67	76	89	19	34	55	67	85	23	41	42	54	79
		33	64	70	79	85	+	37	52	70	78	+	50	65	66	74	88
53	43	43	56	62	73	80	+	27	43	63	73	88	31	50	51	62	83
		33	70	75	83	88	+	46	60	76	83	+	58	71	72	79	+
49	43	43	64	70	78	84	+	37	52	70	78	+	41	58	59	69	86
		33	76	80	86	+	+	55	68	81	86	+	66	77	78	83	+
45	43	43	71	76	83	88	+	47	61	76	83	+	51	67	68	76	89
		33	81	85	89	+	+	64	75	85	89	+	73	82	82	87	+
41	43	43	78	82	87	+	+	58	70	82	87	+	61	74	75	82	+
		33	86	88	+	+	+	72	81	88	+	+	80	86	87	+	+
36	43	43	85	87	+	+	+	70	79	88	+	+	73	82	83	87	+
		33	+	+	+	+	+	81	87	+	+	+	86	+	+	+	+
31	43	43	+	+	+	+	+	81	87	+	+	+	82	89	89	+	+
		33	+	+	+	+	+	88	+	+	+	+	+	+	+	+	+

+ = GREATER THAN 90% - = LESS THAN 10%

Didapatkan Ketinggian Tangannya saat memulai adalah 36.73 inchi (terletak diantara 33 inchi dan 43 inchi), Jarak membawanya adalah 23.13 Feet (terletak diantara 14 feet dan 28 feet), Frekuensi Membawanya 4 Jam Sekali (terletak diantara 5 menit dan 8 jam) dan Berat Beban adalah 40.75 pound (terletak diantara 36 pound dan 41 pound). Berikut ini merupakan hasil interpolasinya:

Untuk Berat Beban 41 pound, Jarak 28 feet, Ketinggian Tangan 43 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 82}{90 - x}$$

$$7.917(90 - x) = 4(8)$$

$$712.53 - 7.917x = 32$$

$$-7.917x = 32 - 712.53$$

$$x = \frac{680.53}{7.917} = 85.9581\%$$

Untuk Berat Beban 41 pound, Jarak 28 feet, Ketinggian Tangan 33 inchi: 90%

Untuk Berat Beban 41 pound, Jarak 14 feet, Ketinggian Tangan 43 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 87}{90 - x}$$

$$7.917(90 - x) = 4(3)$$

$$712.53 - 7.917x = 12$$

$$-7.917x = 12 - 712.53$$

$$x = \frac{700.53}{7.917} = 88.4843\%$$

Untuk Berat Beban 41 pound, Jarak 14 feet, Ketinggian Tangan 33 inchi: 90%

Untuk Berat Beban 36 pound, Jarak 28 feet, Ketinggian Tangan 43 inchi:

$$\frac{8 - 0.083}{8 - 4} = \frac{90 - 87}{90 - x}$$

$$7.917(90 - x) = 4(3)$$

$$712.53 - 7.917x = 12$$

$$-7.917x = 12 - 712.53$$

$$x = \frac{700.53}{7.917} = 88.4843\%$$

Untuk Berat Beban 36 pound, Jarak 28 feet, Ketinggian Tangan 33 inchi: 90%

Untuk Berat Beban 41 pound, Jarak 28 feet:

$$\frac{43 - 33}{43 - 36.73} = \frac{85.9581 - 90}{85.9581 - x}$$

$$10(85.9581 - x) = 6.27(-4.0419)$$

$$859.581 - 10x = -25.3427$$

$$-10x = -25.3427 - 859.581$$

$$x = \frac{884.9237}{10} = 88.4924\%$$

Untuk Berat Beban 41 pound, Jarak 14 feet:

$$\frac{43 - 33}{43 - 36.73} = \frac{88.4843 - 90}{88.4843 - x}$$

$$10(88.4843 - x) = 6.27(-1.5157)$$

$$884.843 - 10x = -9.5034$$

$$-10x = -9.5034 - 884.843$$

$$x = \frac{894.3464}{10} = 89.4346\%$$

Untuk Berat Beban 36 pound, Jarak 28 feet:

$$\frac{43 - 33}{43 - 36.73} = \frac{88.4843 - 90}{88.4843 - x}$$

$$10(88.4843 - x) = 6.27(-1.5157)$$

$$884.843 - 10x = -9.5034$$

$$-10x = -9.5034 - 884.843$$

$$x = \frac{894.3464}{10} = 89.4346\%$$

Untuk Berat Beban 36 pound, Jarak 14 feet: 90%

Untuk Berat Beban 45 pound:

$$\frac{28 - 14}{28 - 23.13} = \frac{88.4924 - 89.4346}{88.4924 - x}$$

$$14(88.4924 - x) = 4.87(-0.9422)$$

$$1238.8936 - 14x = -4.5885$$

$$-14x = -4.5885 - 1238.8936$$

$$x = \frac{1243.4821}{14} = 88.8202\%$$

Untuk Berat Beban 41 pound:

$$\frac{28 - 14}{28 - 23.13} = \frac{88.4924 - 90}{88.4924 - x}$$

$$14(88.4924 - x) = 4.87(-1.5076)$$

$$1238.8936 - 14x = -7.342$$

$$-14x = -7.342 - 1238.8936$$

$$x = \frac{1246.2356}{14} = 89.0168\%$$

Interpolasi Akhir:

$$\frac{41 - 36}{41 - 40.75} = \frac{88.8202 - 89.0168}{88.8202 - x}$$

$$4(88.8202 - x) = 0.25(-0.1966)$$

$$355.2808 - 4x = -0.0492$$

$$-4x = -0.0492 - 355.2808$$

$$x = \frac{355.33}{4} = 88.8325\%$$

11. Untuk Gerakan Mendorong (*Pushing*) Gerobak Dorong berisi Kardus berisi Kepingan Puzzle dari Stasiun *Press* menuju Stasiun Cat Semprot:

TABLE 8M - MALE POPULATION PERCENTAGES FOR PUSHING TASKS
SUSTAINED FORCE

PUSHING DISTANCE		7 FEET					25 FEET					50 FEET					
		30s	1m	5m	30m	8h	30s	1m	5m	30m	8h	30s	1m	5m	30m	8h	
SUSTAINED PUSHING FORCE (POUNDS)	105	57	-	-	-	23	-	-	-	-	-	-	-	-	-	-	-
		37	-	-	-	28	-	-	-	-	-	-	-	-	-	-	-
		25	-	-	-	27	-	-	-	-	-	-	-	-	-	-	-
	100	57	-	-	-	12	29	-	-	-	-	11	-	-	-	-	-
		37	-	-	-	12	15	34	-	-	-	-	-	-	-	-	-
		25	-	-	-	11	14	32	-	-	-	-	-	-	-	-	-
	95	57	-	-	13	16	35	-	-	-	-	16	-	-	-	-	-
		37	-	-	17	20	40	-	-	-	-	14	-	-	-	-	-
		25	-	-	16	19	39	-	-	-	-	11	-	-	-	-	-
	90	57	-	-	18	22	42	-	-	-	-	21	-	-	-	-	-
		37	-	-	22	26	47	-	-	-	-	20	-	-	-	-	-
		25	-	-	21	25	45	-	-	-	-	16	-	-	-	-	-
	85	57	-	-	24	28	49	-	-	-	-	11	27	-	-	-	-
		37	-	13	29	33	53	-	-	-	-	26	-	-	-	-	-
		25	-	12	28	32	52	-	-	-	-	22	-	-	-	-	-
	80	57	-	14	31	36	56	-	-	13	16	35	-	-	-	-	13
		37	-	18	36	41	60	-	-	12	15	33	-	-	-	-	12
		25	-	17	35	39	59	-	-	-	12	29	-	-	-	-	-
	75	57	-	21	39	44	63	-	-	19	23	43	-	-	-	-	19
		37	13	25	44	49	67	-	-	18	21	41	-	-	-	-	18
		25	12	24	43	47	66	-	-	14	17	37	-	-	-	-	14
	70	57	16	29	48	52	69	-	11	27	31	51	-	-	-	12	15
		37	20	33	53	57	72	-	-	25	29	50	-	-	-	12	14
		25	19	32	52	55	72	-	-	21	25	45	-	-	-	11	20
65	57	23	38	57	60	75	-	-	18	36	40	60	-	-	19	23	
	37	28	43	61	64	78	-	-	16	34	38	58	-	-	18	22	
	25	27	42	60	63	77	-	-	13	29	34	54	-	-	14	18	
60	57	33	48	65	68	80	-	-	26	46	50	67	-	-	12	28	
	37	38	52	69	71	82	-	-	25	44	48	66	-	-	11	27	
	25	37	51	68	71	82	-	-	21	39	44	63	-	-	23	26	
55	57	44	58	72	75	85	11	37	56	60	75	-	-	20	39	43	
	37	49	62	76	78	86	14	36	55	58	74	-	-	19	38	42	
	25	47	61	75	77	86	13	31	50	54	71	-	-	15	33	37	
50	57	55	67	79	81	88	20	49	66	69	81	-	-	32	51	56	
	37	59	71	82	83	89	23	47	65	68	80	-	-	30	50	53	
	25	58	70	81	83	89	23	43	61	64	78	-	-	25	45	49	
45	57	66	76	85	86	88	32	61	75	77	86	15	45	62	66	71	
	37	70	78	86	88	88	36	59	74	76	85	19	43	61	65	70	
	25	69	78	86	87	87	35	55	71	73	84	20	38	57	61	67	
40	57	76	83	89	89	88	47	72	82	84	88	28	58	73	76	79	
	37	78	85	89	89	88	50	71	81	83	88	33	57	72	75	78	
	25	78	84	89	89	88	50	67	79	81	88	34	53	69	72	75	
35	57	84	88	89	89	88	62	81	88	89	89	44	71	82	83	85	
	37	85	89	89	89	88	65	80	87	89	89	49	70	81	83	85	
	25	85	89	89	89	88	65	78	86	87	89	50	67	79	81	83	
30	57	89	89	89	89	88	75	88	89	89	89	62	82	88	89	89	
	37	89	89	89	89	88	77	87	89	89	89	66	81	88	89	89	
	25	89	89	89	89	88	77	86	89	89	89	67	79	87	88	88	
25	57	89	89	89	89	88	86	89	89	89	89	77	89	89	89	89	
	37	89	89	89	89	88	87	89	89	89	89	80	89	89	89	89	
	25	89	89	89	89	88	87	89	89	89	89	80	88	89	89	89	
20	57	89	89	89	89	88	89	89	89	89	89	88	89	89	89	89	
	37	89	89	89	89	88	89	89	89	89	89	89	89	89	89	89	
	25	89	89	89	89	88	89	89	89	89	89	89	89	89	89	89	

+ = GREATER THAN 90% - = LESS THAN 10%

Didapatkan Ketinggian Tangannya saat memulai adalah 44.29 inchi (terletak diantara 37 inchi dan 57 inchi), Jarak mendorongnya adalah 26.07 Feet (terletak diantara 25 feet dan 50 feet), Frekuensi Mendorongnya 8 Jam Sekali dan Gaya Berkelanjutan yang digunakan untuk mendorong beban yang ada adalah 56.83 pound (terletak diantara 55 pound dan 60 pound). Berikut ini merupakan hasil interpolasinya:

Untuk Gaya Berkelanjutan 60 pound, Jarak 50 Feet:

$$\frac{57 - 37}{57 - 44.29} = \frac{43 - 42}{43 - x}$$

$$20(43 - x) = 12.71(1)$$

$$860 - 20x = 12.71$$

$$-20x = 12.71 - 860$$

$$x = \frac{847.29}{20} = 42.3645\%$$

Untuk Gaya Berkelanjutan 60 pound, Jarak 25 Feet:

$$\frac{57 - 37}{57 - 44.29} = \frac{67 - 66}{67 - x}$$

$$20(67 - x) = 12.71(1)$$

$$1340 - 20x = 12.71$$

$$-20x = 12.71 - 1340$$

$$x = \frac{1327.29}{20} = 66.3645\%$$

Untuk Gaya Berkelanjutan 55 pound, Jarak 50 Feet:

$$\frac{57 - 37}{57 - 44.29} = \frac{53 - 52}{53 - x}$$

$$20(53 - x) = 12.71(1)$$

$$1060 - 20x = 12.71$$

$$-20x = 12.71 - 1060$$

$$x = \frac{1047.29}{20} = 52.3645\%$$

Untuk Gaya Berkelanjutan 55 pound, Jarak 25 Feet:

$$\frac{57 - 37}{57 - 44.29} = \frac{75 - 74}{75 - x}$$

$$20(75 - x) = 12.71(1)$$

$$1500 - 20x = 12.71$$

$$-20x = 12.71 - 1500$$

$$x = \frac{1512.71}{20} = 75.6355\%$$

Untuk Gaya Berkelanjutan 60 pound:

$$\frac{50 - 25}{50 - 26.08} = \frac{42.3645 - 66.3645}{42.3645 - x}$$

$$25(42.3645 - x) = 23.92(-24)$$

$$1059.1125 - 25x = -574.08$$

$$-25x = -574.08 - 1059.1125$$

$$x = \frac{1633.1925}{25} = 65.3277\%$$

Untuk Gaya Berkelanjutan 55 pound:

$$\frac{50 - 25}{50 - 26.08} = \frac{52.3645 - 75.6355}{52.3645 - x}$$

$$25(52.3645 - x) = 23.92(-23.271)$$

$$1309.1125 - 25x = -556.6423$$

$$-25x = -556.6423 - 1309.1125$$

$$x = \frac{1865.7548}{25} = 74.6302\%$$

Interpolasi Akhir:

$$\frac{60 - 55}{60 - 56.85} = \frac{65.3277 - 74.6302}{65.3277 - x}$$

$$5(65.3277 - x) = 3.15(-9.3025)$$

$$326.6385 - 5x = -29.3029$$

$$-5x = -29.3029 - 326.6385$$

$$x = \frac{355.9414}{5} = 71.1883\%$$

HITUNGAN ANALISIS SNOOK TABLE FOR MAXIMUM ACCEPTABLE WEIGHT UNTUK USULAN

1. Untuk Gerakan Mendorong (*Pushing*) Gerobak Dorong berisi Bahan Kayu dari Gudang menuju Stasiun Gergaji Besar:

Height Percent	2.1 m push One push every								7.6 m push One push every								15.2 m push One push every								30.5 m push One push every								45.7 m push One push every								61.0 m push One push every							
	6	12	1	2	5	30	8		15	22	1	2	5	30	8		25	35	1	2	5	30	8		1	2	5	30	8		1	2	5	30	8		2	5	30	8								
	Initial forces																																															
144	20	22	25	25	26	26	31	14	16	21	21	22	22	26	16	18	19	19	20	21	25	15	16	19	19	24	13	14	16	16	20	12	14	14	18													
95	25	29	32	32	34	34	41	18	20	27	27	28	28	34	21	23	25	25	26	27	32	19	21	25	25	31	16	18	21	21	26	16	18	19	23													
64	32	36	40	40	42	42	51	23	25	33	33	35	35	42	26	29	31	31	33	33	40	24	27	31	31	38	20	23	26	26	33	20	22	22	28													
	38	43	47	47	50	51	61	27	31	40	40	42	42	51	31	35	37	37	40	40	48	28	32	37	37	46	24	27	32	32	39	23	27	27	34													
	44	49	55	55	58	58	70	31	35	46	46	48	49	58	36	40	43	43	45	45	55	32	37	42	42	53	28	31	36	36	48	27	31	31	39													
	21	24	26	26	28	28	34	16	18	23	23	25	25	30	18	21	22	22	23	24	28	17	19	22	22	27	14	16	19	19	23	14	16	16	20													
	28	31	34	34	36	36	44	21	23	20	20	32	32	39	24	27	28	28	30	30	36	21	24	28	28	35	18	21	24	24	30	18	21	20	26													
	34	38	43	43	45	45	54	26	29	38	38	40	40	48	29	33	35	35	37	38	45	27	30	35	35	44	23	26	30	30	37	22	26	26	32													
	41	46	51	51	54	55	65	31	35	45	45	48	48	58	35	40	42	42	45	45	54	32	36	42	42	52	27	31	36	36	45	27	31	31	38													
	47	53	59	59	62	63	75	35	40	52	52	55	55	66	40	46	49	49	52	52	62	37	41	48	48	60	32	36	41	41	52	31	35	35	44													
	19	22	24	24	25	25	31	13	14	20	20	21	21	26	15	17	19	19	20	20	24	14	16	19	19	23	12	14	16	16	20	12	14	14	17													
	25	28	31	31	33	33	40	16	19	26	26	27	28	33	19	21	24	24	26	26	31	18	21	24	24	30	16	18	21	21	26	16	18	18	22													
	31	35	39	39	41	41	50	20	23	32	32	34	35	41	23	27	30	30	32	33	39	23	26	30	30	37	20	22	26	26	32	19	22	22	28													
	38	42	46	46	49	50	59	25	28	39	39	41	41	50	28	32	36	36	39	39	47	28	31	36	36	45	24	27	31	31	39	23	26	26	33													
	43	48	53	53	57	57	68	28	32	45	45	47	48	57	32	37	42	42	44	45	54	32	36	41	41	52	27	31	36	36	44	26	30	30	38													
	Sustained forces																																															
144	10	13	15	15	18	18	22	8	9	13	13	15	16	18	8	9	11	12	13	14	16	8	10	12	13	16	7	8	10	11	13	7	8	9	11													
95	13	17	21	21	24	25	30	10	13	17	18	20	21	25	11	13	15	16	18	18	22	11	13	16	18	21	10	11	13	15	18	9	11	13	15													
64	17	22	27	27	31	32	38	13	16	22	23	25	27	32	14	17	20	20	23	24	28	15	17	20	23	28	12	14	17	19	23	12	14	16	19													
	21	27	33	33	38	40	47	16	20	28	29	32	33	39	17	20	24	25	28	29	34	18	21	25	29	34	15	18	21	24	28	15	17	20	24													
	25	31	38	40	45	46	54	19	23	32	33	38	39	46	20	24	28	29	33	34	40	21	25	29	33	39	18	21	24	28	33	17	20	23	28													
	10	13	16	17	19	19	23	8	10	13	13	15	16	18	8	10	11	12	13	13	16	8	10	12	13	16	7	8	9	11	13	7	8	9	11													
	14	18	22	22	25	26	31	11	13	17	18	20	21	25	11	13	15	16	18	18	21	11	13	16	18	21	9	11	13	15	18	9	11	12	15													
	18	23	28	29	33	34	40	14	17	22	23	26	27	32	14	17	19	20	23	23	28	15	17	20	23	27	12	14	17	19	23	12	14	16	19													
	22	28	34	35	40	41	49	17	21	27	29	32	33	39	18	21	24	25	28	29	34	18	21	25	28	33	15	18	21	24	28	15	17	20	23													
	26	33	40	41	46	48	57	20	24	32	33	37	38	45	20	25	28	29	32	33	40	21	25	29	33	39	17	20	24	27	32	17	20	23	27													
	10	13	16	16	18	19	23	8	10	12	13	14	15	18	8	10	11	11	12	13	15	8	9	11	13	15	7	8	9	11	13	7	8	9	10													
	14	18	21	22	25	26	31	11	13	17	17	19	20	24	11	13	14	15	17	17	21	11	13	15	17	20	9	11	12	14	17	9	10	12	14													
	18	23	28	29	32	33	39	14	17	21	22	25	26	31	14	17	19	19	22	22	27	14	16	19	22	26	12	14	16	18	22	12	14	15	18													
	22	28	34	35	39	41	48	17	21	26	27	31	32	37	18	21	23	24	27	28	33	17	20	24	27	32	14	17	20	23	27	14	17	19	22													
	26	32	39	41	46	48	56	20	25	30	32	36	37	44	21	25	27	28	31	32	38	20	24	28	32	37	17	20	23	26	31	16	19	22	26													

- Note:
1. Height is vertical floor to hands in cm
 2. Percent pertains to industrial population
 3. Initial force - required to start motion
 4. Sustained force - required to maintain motion
4. Italicized values exceed 8 hr physiological criteria

Didapatkan Ketinggian Tangan: 112.5 cm (terletak diantara 95 cm dan 144 cm). Jarak: 8.65 m (terletak diantara 7.6 m dan 15.2 m), Frekuensi mendorongnya: 8 jam sekali, dan Persentase populasi yang dapat melakukan pekerjaan tersebut tanpa mengalami kelelahan yang berarti sebesar 58.1217% (Terletak diantara 50% dan 75%). Berikut ini merupakan hasil interpolasinya:

Untuk Ketinggian Tangan 144 cm, Jarak 15.2 m:

$$\frac{75 - 50}{75 - 58.1217} = \frac{22 - 28}{22 - x}$$

$$25(22 - x) = 16.8783(-6)$$

$$550 - 25x = -101.2698$$

$$-25x = -101.2698 - 550$$

$$x = \frac{651.2698}{25} = 26.0508 \text{ kg}$$

Untuk Ketinggian Tangan 144 cm, Jarak 7.6 m:

$$\frac{75 - 50}{75 - 58.1217} = \frac{25 - 32}{25 - x}$$

$$25(25 - x) = 16.8783(-7)$$

$$625 - 25x = -118.1481$$

$$-25x = -118.1481 - 625$$

$$x = \frac{743.1481}{25} = 29.7259 \text{ kg}$$

Untuk Ketinggian Tangan 95 cm, Jarak 15.2 m:

$$\frac{75 - 50}{75 - 58.1217} = \frac{21 - 28}{21 - x}$$

$$25(21 - x) = 16.8783(-7)$$

$$525 - 25x = -118.1481$$

$$-25x = -118.1481 - 525$$

$$x = \frac{649.1481}{25} = 25.7259 \text{ kg}$$

Untuk Ketinggian Tangan 95 cm, Jarak 7.6 m:

$$\frac{75 - 50}{75 - 58.1217} = \frac{25 - 32}{25 - x}$$

$$25(25 - x) = 16.8783(-7)$$

$$625 - 25x = -118.1481$$

$$-25x = -118.1481 - 625$$

$$x = \frac{743.1481}{25} = 29.7259 \text{ kg}$$

Untuk Ketinggian Tangan 144 cm:

$$\frac{15.2 - 7.6}{15.2 - 8.65} = \frac{26.0508 - 29.7259}{26.0508 - x}$$

$$7.6(26.0508 - x) = 6.55(-3.6751)$$

$$197.9861 - 7.6x = -24.0719$$

$$-7.6x = -24.0719 - 197.9861$$

$$x = \frac{222.058}{7.6} = 29.2182 \text{ kg}$$

Untuk Ketinggian Tangan 95 cm:

$$\frac{15.2 - 7.6}{15.2 - 8.65} = \frac{25.7259 - 29.7259}{25.7259 - x}$$

$$7.6(25.7259 - x) = 6.55(-4)$$

$$195.5168 - 7.6x = -26.2$$

$$-7.6x = -26.2 - 195.5168$$

$$x = \frac{221.7168}{7.6} = 29.1733 \text{ kg}$$

Interpolasi Akhir:

$$\frac{144 - 95}{144 - 112.5} = \frac{29.2182 - 29.1733}{29.2182 - x}$$

$$49(29.2182 - x) = 31.5(0.0449)$$

$$1431.6918 - 49x = 1.4144$$

$$-49x = 1.4144 - 1431.6918$$

$$x = \frac{1430.2774}{49} = 29.1893 \text{ kg}$$

2. Untuk Gerakan Mendorong (*Pushing*) Gerobak Dorong berisi Potongan Kayu dari Stasiun Gergaji Besar menuju Stasiun Amplas:

Height Percent	2.1 m push One push every				7.6 m push One push every				15.2 m push One push every				30.5 m push One push every				45.7 m push One push every				61.0 m push One push every				Note:												
	6	12	1	2	5	30	6	15	22	1	2	5	30	6	25	35	1	2	5	30	8	1	2	5		30	8	2	5	30	8						
Initial forces																																Note: 1. Height is vertical floor to hands in cm 2. Percent pertains to Industrial population 3. Initial force - required to start motion 4. Sustained force - required to maintain motion 4. Italicized values exceed 8 hr physiological criteria					
90	20	22	25	25	26	26	31	14	16	21	21	22	22	26	16	18	19	19	20	21	25	15	16	19	19	24	13	14	16	16	20		12	14	14	18	
75	26	29	32	32	34	34	41	18	20	27	27	28	28	34	21	23	25	25	26	27	32	19	21	25	25	31	16	18	21	21	26		16	18	18	23	
50	32	36	40	40	42	42	51	23	25	33	33	35	35	42	26	29	31	31	33	33	40	24	27	31	31	38	20	23	26	26	33		20	22	22	28	
25	38	43	47	47	50	51	61	27	31	40	40	42	42	51	31	35	37	37	40	40	48	28	32	37	37	46	24	27	32	32	39		23	27	27	34	
10	44	49	55	55	58	58	70	31	35	46	46	48	49	58	36	40	43	43	45	45	55	32	37	42	42	53	28	31	36	36	48		27	31	31	39	
90	21	24	26	26	28	28	34	16	19	23	23	25	25	30	18	21	22	22	23	24	29	17	19	22	22	27	14	16	19	19	23		14	16	16	20	
75	28	31	34	34	36	36	44	21	23	28	28	30	32	32	39	24	27	28	28	30	30	36	21	24	28	28	35	18	21	24	24		30	18	21	20	26
50	34	38	43	43	45	45	54	26	29	38	38	40	40	48	29	33	35	35	37	38	45	27	30	35	35	44	23	26	30	30	37		22	26	26	32	
25	41	46	51	51	54	55	65	31	35	45	45	48	48	58	35	40	42	42	45	45	54	32	36	42	42	52	27	31	36	36	45		27	31	31	38	
10	47	53	59	59	62	63	75	35	40	52	52	55	56	66	40	46	49	49	52	52	62	37	41	48	48	60	32	36	41	41	52		31	35	35	44	
90	19	22	24	24	25	26	31	13	14	20	20	21	21	26	15	17	19	19	20	20	24	14	16	19	19	23	12	14	16	16	20		12	14	14	17	
75	25	28	31	31	33	33	40	16	19	26	26	27	28	33	19	21	24	24	26	26	31	18	21	24	24	30	16	18	21	21	26	15	18	18	22		
50	31	35	39	39	41	41	50	20	23	32	32	34	35	41	23	27	30	30	32	33	39	23	26	30	30	37	20	22	26	26	32	19	22	22	28		
25	38	42	46	46	49	50	59	25	29	39	39	41	41	50	28	32	36	36	39	39	47	28	31	36	36	45	24	27	31	31	39	23	26	26	33		
10	43	48	53	53	57	57	68	28	32	45	45	47	48	57	32	37	42	42	44	45	54	32	36	41	41	52	27	31	36	36	44	26	30	30	38		
Sustained forces																																Note: 1. Height is vertical floor to hands in cm 2. Percent pertains to Industrial population 3. Initial force - required to start motion 4. Sustained force - required to maintain motion 4. Italicized values exceed 8 hr physiological criteria					
90	10	13	15	16	18	18	22	8	9	13	13	15	16	18	8	9	11	12	13	14	16	8	10	12	13	16	7	8	10	11	13		7	8	9	11	
75	13	17	21	22	24	25	30	10	13	17	18	20	21	25	11	13	15	16	18	18	22	11	13	16	18	21	10	11	13	15	18		9	11	13	15	
50	17	22	27	28	31	32	38	13	16	22	23	26	27	32	14	17	20	20	23	24	28	15	17	20	23	28	12	14	17	19	23		12	14	16	19	
25	21	27	33	34	38	40	47	16	20	28	29	32	33	39	17	20	24	25	28	29	34	18	21	25	29	34	15	18	21	24	28		15	17	20	24	
10	25	31	38	40	45	46	54	19	23	32	33	38	39	46	20	24	28	29	33	34	40	21	25	29	33	39	18	21	24	28	17		20	23	28		
90	10	13	16	17	19	19	23	8	10	13	13	15	15	18	8	10	11	12	13	13	16	8	10	12	13	16	7	8	9	11	13		7	8	9	11	
75	14	18	22	22	25	25	31	11	13	17	18	20	21	25	11	13	15	16	18	18	21	11	13	16	18	21	9	11	13	15	18		9	11	12	15	
50	18	23	28	29	33	34	40	14	17	22	23	26	27	32	14	17	19	20	23	23	28	15	17	20	23	27	12	14	17	19	23		12	14	16	19	
25	22	28	34	35	40	41	49	17	21	27	29	32	33	39	18	21	24	25	28	29	34	18	21	25	28	33	15	18	21	24	28		15	17	20	23	
10	26	33	40	41	46	48	57	20	24	32	33	37	38	45	20	25	28	29	32	33	40	21	25	29	33	39	17	20	24	27	32		17	20	23	27	
90	10	13	16	16	18	19	23	8	10	12	13	14	15	18	8	10	11	11	12	13	15	8	9	11	13	15	7	8	9	11	13		7	8	9	10	
75	14	18	21	22	25	26	31	11	13	17	17	19	20	24	11	13	14	15	17	17	21	11	13	15	17	20	9	11	12	14	17	9	10	12	14		
50	18	23	28	29	32	33	39	14	17	21	22	25	26	31	14	17	19	19	22	22	27	14	16	19	22	26	12	14	16	18	22	12	14	15	18		
25	22	28	34	35	39	41	48	17	21	26	27	31	32	37	18	21	23	24	27	28	33	17	20	24	27	32	14	17	20	23	27	14	17	19	22		
10	26	32	39	41	46	48	56	20	25	30	32	36	37	44	21	25	27	28	31	32	38	20	24	28	32	37	17	20	23	26	31	16	19	22	25		

Didapatkan Ketinggian Tangan: 112.5 cm (terletak diantara 95 cm dan 144 cm). Jarak: 4.85 m (terletak diantara 7.6 m dan 15.2 m), Frekuensi mendorongnya: 8 jam sekali, dan Persentase populasi yang dapat melakukan pekerjaan tersebut tanpa mengalami kelelahan yang berarti sebesar 73.4276% (Terletak diantara 50% dan 75%). Berikut ini merupakan hasil interpolasinya:

Untuk Ketinggian Tangan 144 cm, Jarak 7.6 m:

$$\frac{75 - 50}{75 - 73.4276} = \frac{25 - 32}{25 - x}$$

$$25(25 - x) = 1.5724(-7)$$

$$625 - 25x = -11.0068$$

$$-25x = -11.0068 - 625$$

$$x = \frac{636.0068}{25} = 25.4403 \text{ kg}$$

Untuk Ketinggian Tangan 144 cm, Jarak 2.1 m:

$$\frac{75 - 50}{75 - 73.4276} = \frac{30 - 38}{30 - x}$$

$$25(30 - x) = 1.5724(-8)$$

$$750 - 25x = -12.5792$$

$$-25x = -12.5792 - 750$$

$$x = \frac{737.4208}{25} = 29.4968 \text{ kg}$$

Untuk Ketinggian Tangan 95 cm, Jarak 7.6 m:

$$\frac{75 - 50}{75 - 73.4276} = \frac{25 - 32}{25 - x}$$

$$25(25 - x) = 1.5724(-7)$$

$$625 - 25x = -11.0068$$

$$-25x = -11.0068 - 625$$

$$x = \frac{636.0068}{25} = 25.4403 \text{ kg}$$

Untuk Ketinggian Tangan 95 cm, Jarak 2.1 m:

$$\frac{75 - 50}{75 - 73.4276} = \frac{31 - 40}{31 - x}$$

$$25(31 - x) = 1.5724(-9)$$

$$775 - 25x = -14.1516$$

$$-25x = -14.1516 - 775$$

$$x = \frac{789.1516}{25} = 31.5661 \text{ kg}$$

Untuk Ketinggian Tangan 144 cm:

$$\frac{7.6 - 2.1}{7.6 - 4.85} = \frac{25.4403 - 29.4968}{25.4403 - x}$$

$$5.5(25.4403 - x) = 2.75(-4.0565)$$

$$139.9217 - 5.5x = -11.1554$$

$$-5.5x = -11.1554 - 139.9217$$

$$x = \frac{151.0771}{5.5} = 27.4686 \text{ kg}$$

Untuk Ketinggian Tangan 95 cm:

$$\frac{7.6 - 2.1}{7.6 - 4.85} = \frac{25.4403 - 31.5661}{25.4403 - x}$$

$$5.5(25.4403 - x) = 2.75(-6.1258)$$

$$139.9217 - 5.5x = -16.846$$

$$-5.5x = -16.846 - 139.9217$$

$$x = \frac{156.7677}{5.5} = 28.5032 \text{ kg}$$

Interpolasi Akhir:

$$\frac{144 - 95}{144 - 112.5} = \frac{27.4686 - 28.5032}{27.4686 - x}$$

$$49(27.4686 - x) = 31.5(-1.0346)$$

$$1345.9614 - 49x = -32.5899$$

$$-49x = -32.5899 - 1345.9614$$

$$x = \frac{1378.5513}{49} = 28.1337 \text{ kg}$$

3. Untuk Gerakan Membawa (*Carrying*) Kardus Berisi Kayu Hasil Amplas dari Stasiun Amplas menuju Stasiun Gergaji Kecil dan *Drilling*:

Height Percent	2.1 m carry One carry every						4.3 m carry One carry every						8.5 m carry One carry every									
	6 s	12	1 min	2	5	30 hr	8	6 s	12	1 min	2	5	30 hr	8	6 s	12	1 min	2	5	30	8 hr	
Males																						
111	90	10	14	17	17	19	21	25	9	11	15	15	17	19	22	10	11	13	13	15	17	20
	75	14	19	23	23	26	29	34	13	16	21	21	23	26	30	13	15	18	18	20	23	27
	50	19	25	30	30	33	38	44	17	20	27	27	30	34	39	17	19	23	24	26	29	35
	25	23	30	37	37	41	46	54	20	25	33	33	37	41	48	21	24	29	29	32	36	43
	10	27	35	43	43	48	54	63	24	29	38	39	43	48	57	24	28	34	34	38	42	50
79	90	13	17	21	21	23	26	31	11	14	18	19	21	23	27	13	15	17	18	20	22	26
	75	18	23	28	29	32	36	42	16	19	25	25	28	32	37	17	20	24	24	27	30	35
	50	23	30	37	37	41	46	54	20	25	32	33	36	41	48	22	26	31	31	35	39	46
	25	28	37	45	46	51	57	67	25	30	40	40	45	50	59	27	32	38	38	42	48	56
	10	33	43	53	53	59	66	78	29	35	47	47	52	59	69	32	38	44	45	50	56	65
Females																						
105	90	11	12	13	13	13	13	18	9	10	13	13	13	18	10	11	12	12	12	12	16	
	75	13	14	15	15	16	16	21	11	12	15	15	16	21	12	13	14	14	14	14	19	
	50	15	16	18	18	18	18	25	12	13	18	18	18	24	14	15	16	16	16	16	22	
	25	17	18	20	20	21	21	28	14	15	20	20	21	21	28	15	17	18	18	19	19	25
	10	19	20	22	22	23	23	31	16	17	22	22	23	23	31	17	19	20	20	21	21	28
72	90	13	14	16	16	16	16	22	10	11	14	14	14	20	12	12	14	14	14	14	19	
	75	15	17	18	18	19	19	25	11	13	16	16	17	23	14	15	16	16	17	17	23	
	50	17	19	21	21	22	22	29	13	15	19	19	20	26	16	17	19	19	20	20	26	
	25	20	22	24	24	25	25	33	15	17	22	22	22	30	18	19	21	22	22	22	30	
	10	22	24	27	27	28	28	37	17	19	24	24	25	33	20	21	24	24	25	25	33	

- Notes:
1. Height is vertical distance floor to hands
 2. Percent pertains to industrial population
 3. Italicized values exceed 8 hr physiological criteria

Didapatkan Ketinggian: 97.5 cm (terletak diantara 111 cm dan 79 cm). Jarak: 2.32 m (terletak diantara 2.1 m dan 4.3 m), Frekuensi Membawanya: 4 jam sekali (terletak diantara 8 jam dan 30 menit), dan Persentase populasi yang dapat melakukan pekerjaan tersebut tanpa mengalami kelelahan yang berarti sebesar 89.9419% (Terletak diantara 75% dan 90%). Berikut ini merupakan hasil interpolasinya:

Untuk Ketinggian 111 cm, Jarak 2.1 m, persentase 90%: **22.8667 kg**

Untuk Ketinggian 111 cm, Jarak 2.1 m, persentase 75%: **31.3333 kg**

Untuk Ketinggian 111 cm, Jarak 4.3 m, persentase 90%: **20.4 kg**

Untuk Ketinggian 111 cm, Jarak 4.3 m, persentase 75%: **27.8667 kg**

Untuk Ketinggian 79 cm, Jarak 2.1 m, persentase 90%: **28.3333 kg**

Untuk Ketinggian 79 cm, Jarak 2.1 m, persentase 75%: **38.8 kg**

Untuk Ketinggian 79 cm, Jarak 4.3 m, persentase 90%: **24.8667 kg**

Untuk Ketinggian 79 cm, Jarak 4.3 m, persentase 75%: **34.3333 kg**

Untuk Ketinggian 111 cm, Jarak 2.1 m:

$$\frac{90 - 75}{90 - 89.9419} = \frac{22.8667 - 31.3333}{22.8667 - x}$$

$$15(22.8667 - x) = 0.0581(-8.4666)$$

$$343.0005 - 15x = -0.4919$$

$$-15x = -0.4919 - 343.0005$$

$$x = \frac{343.4924}{15} = 22.8995 \text{ kg}$$

Untuk Ketinggian 111 cm, Jarak 4.3 m:

$$\frac{90 - 75}{90 - 89.9419} = \frac{20.4 - 27.8867}{20.4 - x}$$

$$15(20.4 - x) = 0.0581(-7.4867)$$

$$306 - 15x = -0.435$$

$$-15x = -0.435 - 306$$

$$x = \frac{306.435}{15} = 20.429 \text{ kg}$$

Untuk Ketinggian 79 cm, Jarak 2.1 m:

$$\frac{90 - 75}{90 - 89.9419} = \frac{28.3333 - 38.8}{28.3333 - x}$$

$$15(28.3333 - x) = 0.0581(-10.4667)$$

$$424.9995 - 15x = -0.6081$$

$$-15x = -0.6081 - 424.9995$$

$$x = \frac{425.6076}{15} = 28.3738 \text{ kg}$$

Untuk Ketinggian 79 cm, Jarak 4.3 m:

$$\frac{90 - 75}{90 - 89.9419} = \frac{24.8667 - 34.3333}{24.8667 - x}$$

$$15(24.8667 - x) = 0.0581(-9.4666)$$

$$373.0005 - 15x = -0.55$$

$$-15x = -0.55 - 373.0005$$

$$x = \frac{373.5505}{15} = 24.9034 \text{ kg}$$

Untuk Ketinggian 111 cm:

$$\frac{4.3 - 2.1}{4.3 - 2.32} = \frac{20.429 - 22.8995}{20.429 - x}$$

$$2.2(20.429 - x) = 1.98(-2.4705)$$

$$44.9438 - 2.2x = -4.8916$$

$$-2.2x = -4.8916 - 44.9438$$

$$x = \frac{49.8354}{2.2} = 22.6525 \text{ kg}$$

Untuk Ketinggian 79 cm:

$$\frac{4.3 - 2.1}{4.3 - 2.32} = \frac{24.9034 - 28.3738}{24.9034 - x}$$

$$2.2(24.9034 - x) = 1.05(-3.4704)$$

$$54.7875 - 2.2x = -3.6439$$

$$-2.2x = -3.6439 - 54.7875$$

$$x = \frac{58.4314}{2.2} = 26.5597 \text{ kg}$$

Interpolasi Akhir:

$$\frac{111 - 79}{111 - 97.5} = \frac{22.6526 - 26.5597}{22.6526 - x}$$

$$32(22.6526 - x) = 13.5(-3.9071)$$

$$724.8832 - 32x = -52.7459$$

$$-32x = -52.7459 - 724.8832$$

$$x = \frac{777.6291}{32} = 24.3009 \text{ kg}$$

4. Untuk Gerakan Membawa (*Carrying*) Kardus Berisi Kayu Hasil Potong dan Dilubangi dari Stasiun Gergaji Kecil dan *Drilling* menuju Stasiun Gerinda:

Height Percent	2.1 m carry One carry every						4.3 m carry One carry every						8.5 m carry One carry every									
	6 s	12 min	1 min	2 min	5 min	30 hr	8 hr	6 s	12 min	1 min	2 min	5 min	30 hr	8 hr	6 s	12 min	1 min	2 min	5 min	30 hr	8 hr	
Males																						
111	90	10	14	17	17	19	21	25	9	11	15	15	17	19	22	10	11	13	13	15	17	20
	75	14	19	23	23	26	29	34	13	16	21	21	23	26	30	13	15	18	18	20	23	27
	50	19	25	30	30	33	38	44	17	20	27	27	30	34	39	17	19	23	24	26	29	35
	25	23	30	37	37	41	46	54	20	25	33	33	37	41	48	21	24	29	29	32	36	43
	10	27	35	43	43	48	54	63	24	29	38	39	43	48	57	24	28	34	34	38	42	50
79	90	13	17	21	21	23	26	31	11	14	18	19	21	23	27	13	15	17	18	20	22	26
	75	18	23	28	29	32	36	42	16	19	25	25	28	32	37	17	20	24	24	27	30	35
	50	23	30	37	37	41	46	54	20	25	32	33	36	41	48	22	26	31	31	35	39	46
	25	28	37	45	46	51	57	67	25	30	40	40	45	50	59	27	32	38	38	42	48	56
	10	33	43	53	53	59	66	78	29	35	47	47	52	59	69	32	38	44	45	50	56	65
Females																						
105	90	11	12	13	13	13	13	18	9	10	13	13	13	18	10	11	12	12	12	12	16	
	75	13	14	15	15	16	16	21	11	12	15	15	16	21	12	13	14	14	14	14	19	
	50	15	16	18	18	18	18	25	12	13	18	18	18	24	14	15	16	16	16	16	22	
	25	17	18	20	20	21	21	28	14	15	20	20	21	21	28	15	17	18	18	19	25	
	10	19	20	22	22	23	23	31	16	17	22	22	23	31	17	19	20	20	21	21	28	
72	90	13	14	16	16	16	16	22	10	11	14	14	14	20	12	12	14	14	14	14	19	
	75	15	17	18	18	19	19	25	11	13	16	16	17	23	14	15	16	16	17	17	23	
	50	17	19	21	21	22	22	29	13	15	19	19	20	26	16	17	19	19	20	20	26	
	25	20	22	24	24	25	25	33	15	17	22	22	22	30	18	19	21	22	22	22	30	
	10	22	24	27	27	28	28	37	17	19	24	24	25	33	20	21	24	24	25	25	33	

- Notes:
1. Height is vertical distance floor to hands
 2. Percent pertains to industrial population
 3. Italicized values exceed 8 hr physiological criteria

Didapatkan Ketinggian: 86.3 cm (terletak diantara 111 cm dan 79 cm). Jarak: 2.52 m (terletak diantara 2.1 m dan 4.3 m), Frekuensi Membawanya: 4 jam sekali (terletak diantara 8 jam dan 30 menit), dan Persentase populasi yang dapat melakukan pekerjaan tersebut tanpa mengalami kelelahan yang berarti sebesar 89.8472% (Terletak diantara 75% dan 90%). Berikut ini merupakan hasil interpolasinya:

Untuk Ketinggian 111 cm, Jarak 2.1 m, persentase 90%: **22.8667 kg**

Untuk Ketinggian 111 cm, Jarak 2.1 m, persentase 75%: **31.3333 kg**

Untuk Ketinggian 111 cm, Jarak 4.3 m, persentase 90%: **20.4 kg**

Untuk Ketinggian 111 cm, Jarak 4.3 m, persentase 75%: **27.8667 kg**

Untuk Ketinggian 79 cm, Jarak 2.1 m, persentase 90%: **28.3333 kg**

Untuk Ketinggian 79 cm, Jarak 2.1 m, persentase 75%: **38.8 kg**

Untuk Ketinggian 79 cm, Jarak 4.3 m, persentase 90%: **24.8667 kg**

Untuk Ketinggian 79 cm, Jarak 4.3 m, persentase 75%: **34.3333 kg**

Untuk Ketinggian 111 cm, Jarak 2.1 m:

$$\frac{90 - 75}{90 - 89.8472} = \frac{22.8667 - 31.3333}{22.8667 - x}$$

$$15(22.8667 - x) = 0.1528(-8.4666)$$

$$343.0005 - 15x = -1.2937$$

$$-15x = -1.2937 - 343.0005$$

$$x = \frac{344.2942}{15} = 22.9529 \text{ kg}$$

Untuk Ketinggian 111 cm, Jarak 4.3 m:

$$\frac{90 - 75}{90 - 89.8472} = \frac{20.4 - 27.8867}{20.4 - x}$$

$$15(20.4 - x) = 0.1528(-7.4867)$$

$$306 - 15x = -1.144$$

$$-15x = -1.144 - 306$$

$$x = \frac{307.144}{15} = 20.4763 \text{ kg}$$

Untuk Ketinggian 79 cm, Jarak 2.1 m:

$$\frac{90 - 75}{90 - 89.8472} = \frac{28.3333 - 38.8}{28.3333 - x}$$

$$15(28.3333 - x) = 0.1528(-10.4667)$$

$$424.9995 - 15x = -0.1599$$

$$-15x = -0.1599 - 424.9995$$

$$x = \frac{425.1594}{15} = 28.344 \text{ kg}$$

Untuk Ketinggian 79 cm, Jarak 4.3 m:

$$\frac{90 - 75}{90 - 89.8472} = \frac{24.8667 - 34.3333}{24.8667 - x}$$

$$15(24.8667 - x) = 0.1528(-9.4666)$$

$$373.0005 - 15x = -1.4465$$

$$-15x = -1.4465 - 373.0005$$

$$x = \frac{374.447}{15} = 24.9631 \text{ kg}$$

Untuk Ketinggian 111 cm:

$$\frac{4.3 - 2.1}{4.3 - 2.52} = \frac{20.4763 - 22.9529}{20.4763 - x}$$

$$2.2(20.4763 - x) = 1.78(-2.4766)$$

$$45.0479 - 2.2x = -4.4083$$

$$-2.2x = -4.4083 - 45.0479$$

$$x = \frac{49.4562}{2.2} = 22.4801 \text{ kg}$$

Untuk Ketinggian 79 cm:

$$\frac{4.3 - 2.1}{4.3 - 2.52} = \frac{24.9631 - 28.344}{24.9631 - x}$$

$$2.2(24.9631 - x) = 1.78(-3.3809)$$

$$54.9188 - 2.2x = -6.018$$

$$-2.2x = -6.018 - 54.9188$$

$$x = \frac{60.9368}{2.2} = 27.6985 \text{ kg}$$

Interpolasi Akhir:

$$\frac{111 - 79}{111 - 86.3} = \frac{22.4801 - 27.6985}{22.4801 - x}$$

$$32(22.4801 - x) = 24.7(-5.2184)$$

$$719.3632 - 32x = -128.8945$$

$$-32x = -128.8945 - 719.3632$$

$$x = \frac{848.2577}{32} = 26.5081 \text{ kg}$$

5. Untuk Gerakan Membawa (*Carrying*) Kardus Berisi Potongan Kayu yang Sudah Digerinda dari Stasiun Gerinda menuju Stasiun Pola:

Maximum Acceptable Weight of Carry (kg)

Height	Percent	2.1 m carry One carry every							4.3 m carry One carry every							8.5 m carry One carry every						
		6 s	12 s	1 min	2 min	5 min	30 min	8 hr	6 s	12 s	1 min	2 min	5 min	30 min	8 hr	6 s	12 s	1 min	2 min	5 min	30 min	8 hr
Males																						
111	90	10	14	17	17	19	21	25	9	11	15	15	17	19	22	10	11	13	13	15	17	20
	75	14	19	23	23	26	29	34	13	16	21	21	23	26	30	13	15	18	18	20	23	27
	50	19	25	30	30	33	38	44	17	20	27	27	30	34	39	17	19	23	24	26	29	35
	25	23	30	37	37	41	46	54	20	25	33	33	37	41	48	21	24	29	29	32	36	43
	10	27	35	43	43	48	54	63	24	29	38	39	43	48	57	24	28	34	34	38	42	50
79	90	13	17	21	21	23	26	31	11	14	18	19	21	23	27	13	15	17	18	20	22	26
	75	18	23	28	29	32	36	42	16	19	25	25	28	32	37	17	20	24	24	27	30	35
	50	23	30	37	37	41	46	54	20	25	32	33	36	41	48	22	26	31	31	35	39	46
	25	28	37	45	46	51	57	67	25	30	40	40	45	50	59	27	32	38	38	42	48	56
	10	33	43	53	53	59	66	78	29	35	47	47	52	59	69	32	38	44	45	50	56	65
Females																						
105	90	11	12	13	13	13	13	18	9	10	13	13	13	13	18	10	11	12	12	12	12	16
	75	13	14	15	15	16	16	21	11	12	15	15	16	16	21	12	13	14	14	14	14	19
	50	15	16	18	18	18	18	25	12	13	18	18	18	18	24	14	15	16	16	16	16	22
	25	17	18	20	20	21	21	28	14	15	20	20	21	21	28	15	17	18	18	19	19	25
	10	19	20	22	22	23	23	31	16	17	22	22	23	23	31	17	19	20	20	21	21	28
72	90	13	14	16	16	16	16	22	10	11	14	14	14	14	20	12	12	14	14	14	14	19
	75	15	17	18	18	19	19	25	11	13	16	16	17	17	23	14	15	16	16	17	17	23
	50	17	19	21	21	22	22	29	13	15	19	19	20	20	26	16	17	19	19	20	20	26
	25	20	22	24	24	25	25	33	15	17	22	22	22	22	30	18	19	21	22	22	22	30
	10	22	24	27	27	28	28	37	17	19	24	24	25	25	33	20	21	24	24	25	25	33

- Notes:
1. Height is vertical distance floor to hands
 2. Percent pertains to industrial population
 3. Italicized values exceed 8 hr physiological criteria

Didapatkan Ketinggian: 90.7 cm (terletak diantara 111 cm dan 79 cm). Jarak: 6.2 m (terletak diantara 4.3 m dan 8.5 m), Frekuensi Membawanya: 4 jam sekali (terletak diantara 8 jam dan 30 menit), dan Persentase populasi yang dapat melakukan pekerjaan tersebut tanpa mengalami kelelahan yang berarti sebesar 88.3434% (Terletak diantara 75% dan 90%). Berikut ini merupakan hasil interpolasinya:

Untuk Ketinggian 111 cm, Jarak 4.3 m, persentase 90%: 20.4 kg

Untuk Ketinggian 111 cm, Jarak 4.3 m, persentase 75%: 27.8667 kg

Untuk Ketinggian 111 cm, Jarak 8.5 m, persentase 90%: 18.4 kg

Untuk Ketinggian 111 cm, Jarak 8.5 m, persentase 75%: 24.8667 kg

Untuk Ketinggian 79 cm, Jarak 4.3 m, persentase 90%: 24.8667 kg

Untuk Ketinggian 79 cm, Jarak 4.3 m, persentase 75%: 34.3333 kg

Untuk Ketinggian 79 cm, Jarak 8.5 m, persentase 90%: 23.8667 kg

Untuk Ketinggian 79 cm, Jarak 8.5 m, persentase 75%: 32.3333 kg

Untuk Ketinggian 111 cm, Jarak 4.3 m:

$$\frac{90 - 75}{90 - 88.3434} = \frac{20.4 - 27.8667}{20.4 - x}$$

$$15(20.4 - x) = 1.6566(-7.4667)$$

$$306 - 15x = -12.3693$$

$$-15x = -12.3693 - 306$$

$$x = \frac{318.3693}{15} = 21.2246 \text{ kg}$$

Untuk Ketinggian 111 cm, Jarak 8.5 m:

$$\frac{90 - 75}{90 - 88.3434} = \frac{18.4 - 24.8667}{18.4 - x}$$

$$15(18.4 - x) = 1.6566(-6.4667)$$

$$276 - 15x = -10.7127$$

$$-15x = -10.7127 - 276$$

$$x = \frac{286.7127}{15} = 19.1142 \text{ kg}$$

Untuk Ketinggian 79 cm, Jarak 4.3 m:

$$\frac{90 - 75}{90 - 88.3434} = \frac{24.8667 - 34.3333}{24.8667 - x}$$

$$15(24.8667 - x) = 1.6566(-9.4666)$$

$$373.0005 - 15x = -15.6824$$

$$-15x = -15.6824 - 373.0005$$

$$x = \frac{388.6829}{15} = 25.9122 \text{ kg}$$

Untuk Ketinggian 79 cm, Jarak 8.5 m:

$$\frac{90 - 75}{90 - 88.3434} = \frac{23.8667 - 32.3333}{23.8667 - x}$$

$$15(23.8667 - x) = 1.6566(-8.4666)$$

$$358.0005 - 15x = -14.0258$$

$$-15x = -14.0258 - 358.0005$$

$$x = \frac{372.0263}{15} = 24.8018 \text{ kg}$$

Untuk Ketinggian 111 cm:

$$\frac{8.5 - 4.3}{8.5 - 6.2} = \frac{19.1142 - 21.2246}{19.1142 - x}$$

$$4.2(19.1142 - x) = 2.3(-2.1104)$$

$$80.2796 - 4.2x = -4.8539$$

$$-4.2x = -4.8539 - 80.2796$$

$$x = \frac{85.1335}{4.2} = 20.2699 \text{ kg}$$

Untuk Ketinggian 79 cm:

$$\frac{8.5 - 4.3}{8.5 - 6.3} = \frac{24.8018 - 25.9122}{24.8018 - x}$$

$$4.2(24.8018 - x) = 2.2(-1.1104)$$

$$104.1676 - 4.2x = -2.4429$$

$$-4.2x = -2.4429 - 104.1676$$

$$x = \frac{106.6105}{4.2} = 25.3835 \text{ kg}$$

Interpolasi Akhir:

$$\frac{111 - 79}{111 - 90.7} = \frac{20.2699 - 25.3835}{20.2699 - x}$$

$$32(20.2699 - x) = 20.3(-5.1136)$$

$$648.6368 - 32x = -103.8061$$

$$-32x = -103.8061 - 648.6368$$

$$x = \frac{752.4429}{32} = 23.5138 \text{ kg}$$

6. Untuk Gerakan Mendorong (*Pushing*) Gerobak Dorong berisi Kardus Mainan Pola dari Stasiun Pola menuju Stasiun Cat Semprot:

Height Percent	2.1 m push One push every				7.6 m push One push every				15.2 m push One push every				30.5 m push One push every				45.7 m push One push every				61.0 m push One push every															
	6	12	1	2	5	30	8	15	22	1	2	5	30	8	25	35	1	2	5	30	8	1	2	5	30	8	1	2	5	30	8	2	5	30	8	
	s		min		hr		s		min		hr		s		min		hr		s		min		hr		s		min		hr		s		min		hr	
Initial forces																																				
90	20	22	25	25	26	31	14	16	21	21	22	22	26	16	18	19	19	20	21	25	15	16	19	19	24	13	14	16	16	20	12	14	14	18		
75	25	29	32	32	34	34	41	18	20	27	27	28	28	34	21	23	25	25	26	27	32	19	21	25	25	31	16	18	21	21	26	16	18	18	23	
60	32	36	40	40	42	42	51	23	25	33	33	35	35	42	26	29	31	31	33	33	40	24	27	31	31	38	20	23	26	26	33	20	22	22	28	
45	38	43	47	47	50	51	61	27	31	40	40	42	42	51	31	35	37	37	40	40	48	28	32	37	37	46	24	27	32	32	39	23	27	27	34	
30	44	49	55	55	58	58	70	31	35	46	46	48	49	58	36	40	43	43	45	45	55	32	37	42	42	53	28	31	36	36	48	27	31	31	39	
15	21	24	26	26	28	28	34	16	18	23	23	25	25	30	18	21	22	22	23	24	28	17	19	22	22	27	14	16	19	19	23	14	16	16	20	
95	28	31	34	34	36	36	44	21	23	20	20	32	32	39	24	27	28	28	30	30	36	21	24	28	28	35	18	21	24	24	30	18	21	20	26	
80	34	38	43	43	45	45	54	26	29	38	38	40	40	48	29	33	35	35	37	38	45	27	30	35	35	44	23	26	30	30	37	22	26	26	32	
65	41	46	51	51	54	55	65	31	35	45	45	48	48	58	35	40	42	42	45	45	54	32	36	42	42	52	27	31	36	36	45	27	31	31	38	
50	47	53	59	59	62	63	75	35	40	52	52	55	55	66	40	46	49	49	52	52	62	37	41	48	48	60	32	36	41	41	52	31	35	35	44	
35	19	22	24	24	25	25	31	13	14	20	20	21	21	26	15	17	19	19	20	20	24	14	16	19	19	23	12	14	16	16	20	12	14	14	17	
20	25	28	31	31	33	33	40	16	19	26	26	27	28	33	19	21	24	24	26	26	31	18	21	24	24	30	16	18	21	21	26	16	18	18	22	
5	31	35	39	39	41	41	50	20	23	32	32	34	35	41	23	27	30	30	32	33	39	23	26	30	30	37	20	22	26	26	32	19	22	22	28	
1	25	28	42	46	46	49	50	28	32	39	39	41	41	50	28	32	36	36	39	39	47	28	31	36	36	45	24	27	31	31	39	23	26	26	33	
0	43	48	53	53	57	57	68	28	32	45	45	47	48	57	32	37	42	42	44	45	54	32	36	41	41	52	27	31	36	36	44	26	30	30	38	
Sustained forces																																				
90	10	13	15	16	18	18	22	8	9	13	13	15	16	18	8	9	11	12	13	14	16	8	10	12	13	16	7	8	10	11	13	7	8	9	11	
75	13	17	21	22	24	25	30	10	13	17	18	20	21	25	11	13	15	16	18	18	22	11	13	16	18	21	10	11	13	15	18	9	11	13	15	
60	17	22	27	28	31	32	38	13	16	22	23	26	27	32	14	17	20	20	23	24	29	15	17	20	23	28	12	14	17	19	23	12	14	16	19	
45	21	27	33	34	38	40	47	16	20	28	29	32	33	39	17	20	24	25	28	29	34	18	21	25	29	34	15	18	21	24	28	15	17	20	24	
30	25	31	38	40	45	46	54	19	23	32	33	38	39	46	20	24	28	29	33	34	40	21	25	29	33	39	18	21	24	28	33	17	20	23	28	
15	10	13	16	17	19	19	23	8	10	13	13	15	15	18	8	10	11	12	13	13	16	8	10	12	13	16	7	8	9	11	13	7	8	9	11	
95	14	18	22	22	25	26	31	11	13	17	18	20	21	25	11	13	15	16	18	18	21	11	13	16	18	21	9	11	13	15	18	9	11	12	15	
80	18	23	28	29	33	34	40	14	17	22	23	26	27	32	14	17	19	20	23	23	28	15	17	20	23	27	12	14	17	19	23	12	14	16	19	
65	22	28	34	35	40	41	49	17	21	27	29	32	33	39	18	21	24	25	28	29	34	18	21	25	28	33	15	18	21	24	28	15	17	20	23	
50	26	33	40	41	46	48	57	20	24	32	33	37	38	45	20	25	28	29	32	33	40	21	25	29	33	39	17	20	24	27	32	17	20	23	27	
35	10	13	16	16	18	19	23	8	10	12	13	14	15	18	8	10	11	11	12	13	15	8	9	11	13	15	7	8	9	11	13	7	8	9	10	
20	14	18	21	22	25	26	31	11	13	17	17	19	20	24	11	13	14	15	17	17	21	11	13	15	17	20	9	11	12	14	17	9	10	12	14	
5	18	23	28	29	32	33	39	14	17	21	22	25	26	31	14	17	19	19	22	22	27	14	16	19	22	26	12	14	16	18	22	12	14	15	18	
1	22	28	34	35	39	41	48	17	21	26	27	31	32	37	18	21	23	24	27	28	33	17	20	24	27	32	14	17	20	23	27	14	17	19	22	
0	26	32	39	41	46	48	56	20	25	30	32	36	37	44	21	25	27	28	31	32	38	20	24	28	32	37	17	20	23	26	31	16	19	22	26	

Note:
1. Height is vertical floor to hands in cm
2. Percent pertains to industrial population
3. Initial force - required to start motion
4. Sustained force - required to maintain motion
4. Italicized values exceed 8 hr physiological criteria

Didapatkan Ketinggian Tangan: 112.5 cm (terletak diantara 95 cm dan 144 cm). Jarak: 9.75 m (terletak diantara 7.6 m dan 15.2 m), Frekuensi mendorongnya: 8 jam sekali, dan Persentase populasi yang dapat melakukan pekerjaan tersebut tanpa mengalami kelelahan yang berarti sebesar 54.1384% (Terletak diantara 50% dan 75%). Berikut ini merupakan hasil interpolasinya:

Untuk Ketinggian Tangan 144 cm, Jarak 15.2 m:

$$\frac{75 - 50}{75 - 58.1384} = \frac{22 - 28}{22 - x}$$

$$25(22 - x) = 22.8616(-6)$$

$$550 - 25x = -137.1696$$

$$-25x = -137.1696 - 550$$

$$x = \frac{687.1696}{25} = 27.4868 \text{ kg}$$

Untuk Ketinggian Tangan 144 cm, Jarak 7.6 m:

$$\frac{75 - 50}{75 - 58.1384} = \frac{25 - 32}{25 - x}$$

$$25(25 - x) = 22.8616(-7)$$

$$625 - 25x = -160.0312$$

$$-25x = -160.0312 - 625$$

$$x = \frac{785.0312}{25} = 31.4012 \text{ kg}$$

Untuk Ketinggian Tangan 95 cm, Jarak 15.2 m:

$$\frac{75 - 50}{75 - 58.1384} = \frac{21 - 28}{21 - x}$$

$$25(21 - x) = 22.8616(-7)$$

$$525 - 25x = -160.0312$$

$$-25x = -160.0312 - 525$$

$$x = \frac{685.0312}{25} = 27.4012 \text{ kg}$$

Untuk Ketinggian Tangan 95 cm, Jarak 7.6 m:

$$\frac{75 - 50}{75 - 58.1384} = \frac{25 - 32}{25 - x}$$

$$25(25 - x) = 22.8616(-7)$$

$$625 - 25x = -160.0312$$

$$-25x = -160.0312 - 625$$

$$x = \frac{785.0312}{25} = 31.4012 \text{ kg}$$

Untuk Ketinggian Tangan 144 cm:

$$\frac{15.2 - 7.6}{15.2 - 9.75} = \frac{27.4868 - 31.4012}{27.4868 - x}$$

$$7.6(27.4868 - x) = 5.45(-3.9144)$$

$$208.8997 - 7.6x = -21.3335$$

$$-7.6x = -21.3335 - 208.8997$$

$$x = \frac{230.2332}{7.6} = 30.2938 \text{ kg}$$

Untuk Ketinggian Tangan 95 cm:

$$\frac{15.2 - 7.6}{15.2 - 9.75} = \frac{27.4012 - 31.4012}{27.4012 - x}$$

$$7.6(27.4012 - x) = 5.45(-4)$$

$$208.2491 - 7.6x = -21.8$$

$$-7.6x = -21.8 - 208.2491$$

$$x = \frac{230.0491}{7.6} = 30.2696 \text{ kg}$$

Interpolasi Akhir:

$$\frac{144 - 95}{144 - 112.5} = \frac{30.2938 - 30.2696}{30.2938 - x}$$

$$49(30.2938 - x) = 31.5(0.0242)$$

$$1484.3962 - 49x = 0.7623$$

$$-49x = 0.7623 - 1484.3962$$

$$x = \frac{1483.6339}{49} = 30.2782 \text{ kg}$$

7. Untuk Gerakan Mendorong (*Pushing*) Gerobak Dorong berisi Kepingan *Puzzle* dari Stasiun *Press* menuju Stasiun *Cat Kuas*:

Height Percent	2.1 m push One push every				7.6 m push One push every				15.2 m push One push every				30.5 m push One push every				45.7 m push One push every				61.0 m push One push every				Note:															
	6	12	1	2	5	30	6	15	22	1	2	5	30	6	25	35	1	2	5	30	6	1	2	5		30	6	2	5	30	6									
	s		min		hr		s		min		hr		s		min		hr		min		hr		min		hr		min		hr											
144	90	20	22	25	25	26	26	31	14	16	21	21	22	22	26	16	18	19	19	20	21	25	15	16	19	19	24	13	14	16	16	20	12	14	14	18				
	75	26	29	32	32	34	34	41	18	20	27	27	28	28	34	21	23	25	25	26	27	32	19	21	25	25	31	16	18	21	21	26	16	18	18	23				
	50	32	36	40	40	42	42	51	23	25	33	33	35	35	42	26	29	31	31	33	33	40	24	27	31	31	38	20	23	26	26	33	20	22	22	28				
	25	38	43	47	47	50	51	61	27	31	40	40	42	42	51	31	35	37	37	40	40	48	28	32	37	37	46	24	27	32	32	39	23	27	27	34				
95	90	21	24	26	26	28	28	34	16	19	23	23	25	25	30	18	21	22	22	23	24	29	17	19	22	22	27	14	16	19	19	23	14	16	16	20				
	75	28	31	34	34	36	36	44	21	23	29	29	32	32	39	24	27	28	28	30	30	36	21	24	28	28	35	18	21	24	24	30	18	21	20	26				
	50	34	38	43	43	45	45	54	26	29	38	38	40	40	48	29	33	35	35	37	38	45	27	30	35	35	44	23	26	30	30	37	22	26	26	32				
	25	41	46	51	51	54	55	65	31	35	45	45	48	48	58	35	40	42	42	45	45	54	32	36	42	42	52	27	31	36	36	45	27	31	31	38				
64	90	10	11	12	12	13	13	15	8	9	11	11	12	13	15	8	9	11	11	12	13	15	8	9	11	11	12	13	14	16	8	10	12	13	16	7	8	10	11	13
	75	14	16	18	18	20	20	24	11	13	17	17	19	19	24	11	13	15	15	16	18	21	11	13	16	16	21	9	11	13	13	16	9	11	11	15	9	11	13	15
	50	17	20	23	23	25	25	30	13	16	22	22	26	26	32	14	17	23	23	24	28	15	17	23	23	28	12	14	17	17	23	12	14	14	19	12	14	16	19	
	25	21	27	33	33	36	36	43	16	20	28	28	32	32	39	17	21	29	29	32	34	40	18	21	29	29	34	16	18	21	21	28	16	17	17	20	24	16	17	20
55	90	10	11	12	12	13	13	15	8	9	11	11	12	13	15	8	9	11	11	12	13	15	8	9	11	11	12	13	14	16	8	10	12	13	16	7	8	9	11	13
	75	14	16	18	18	20	20	24	11	13	17	17	19	19	24	11	13	15	15	16	18	21	11	13	16	16	21	9	11	13	13	16	9	11	11	15	9	11	12	15
	50	18	21	24	24	26	26	31	13	16	22	22	26	26	32	14	17	23	23	24	28	15	17	23	23	28	12	14	17	17	23	12	14	14	19	12	14	16	19	
	25	22	28	34	34	37	37	44	17	21	29	29	32	32	39	18	21	29	29	32	34	40	18	21	29	29	34	16	18	21	21	28	16	17	17	20	24	16	17	20
64	90	10	11	12	12	13	13	15	8	9	11	11	12	13	15	8	9	11	11	12	13	15	8	9	11	11	12	13	14	16	8	10	12	13	16	7	8	9	11	13
	75	14	16	18	18	20	20	24	11	13	17	17	19	19	24	11	13	15	15	16	18	21	11	13	16	16	21	9	11	13	13	16	9	11	11	15	9	11	12	15
	50	18	21	24	24	26	26	31	13	16	22	22	26	26	32	14	17	23	23	24	28	15	17	23	23	28	12	14	17	17	23	12	14	14	19	12	14	16	19	
	25	22	28	34	34	37	37	44	17	21	29	29	32	32	39	18	21	29	29	32	34	40	18	21	29	29	34	16	18	21	21	28	16	17	17	20	24	16	17	20

Didapatkan Ketinggian Tangan: 112.5 cm (terletak diantara 95 cm dan 144 cm). Jarak: 5.9 m (terletak diantara 7.6 m dan 15.2 m), Frekuensi mendorongnya: 8 jam sekali, dan Persentase populasi yang dapat melakukan pekerjaan tersebut tanpa mengalami kelelahan yang berarti sebesar 72.8758% (Terletak diantara 50% dan 75%). Berikut ini merupakan hasil interpolasinya:

Untuk Ketinggian Tangan 144 cm, Jarak 7.6 m:

$$\frac{75 - 50}{75 - 72.8758} = \frac{25 - 32}{25 - x}$$

$$25(25 - x) = 2.1242(-7)$$

$$625 - 25x = -14.8694$$

$$-25x = -14.8694 - 625$$

$$x = \frac{639.8694}{25} = 25.5948 \text{ kg}$$

Untuk Ketinggian Tangan 144 cm, Jarak 2.1 m:

$$\frac{75 - 50}{75 - 72.8758} = \frac{30 - 38}{30 - x}$$

$$25(30 - x) = 2.1242(-8)$$

$$750 - 25x = -16.9936$$

$$-25x = -16.9936 - 750$$

$$x = \frac{766.9936}{25} = 30.6797 \text{ kg}$$

Untuk Ketinggian Tangan 95 cm, Jarak 7.6 m:

$$\frac{75 - 50}{75 - 72.8758} = \frac{25 - 32}{25 - x}$$

$$25(25 - x) = 2.1242(-7)$$

$$625 - 25x = -14.8694$$

$$-25x = -14.8694 - 625$$

$$x = \frac{639.8694}{25} = 25.5948 \text{ kg}$$

Untuk Ketinggian Tangan 95 cm, Jarak 2.1 m:

$$\frac{75 - 50}{75 - 72.8758} = \frac{31 - 40}{31 - x}$$

$$25(31 - x) = 2.1242(-9)$$

$$775 - 25x = -19.1178$$

$$-25x = -19.1178 - 775$$

$$x = \frac{794.1178}{25} = 31.7647 \text{ kg}$$

Untuk Ketinggian Tangan 144 cm:

$$\frac{7.6 - 2.1}{7.6 - 5.9} = \frac{25.5948 - 30.6797}{25.5948 - x}$$

$$5.5(25.5948 - x) = 1.7(-5.0843)$$

$$140.7714 - 5.5x = -8.6443$$

$$-5.5x = -8.6443 - 140.7714$$

$$x = \frac{149.4157}{5.5} = 27.1665 \text{ kg}$$

Untuk Ketinggian Tangan 95 cm:

$$\frac{7.6 - 2.1}{7.6 - 5.9} = \frac{25.5948 - 31.7647}{25.5948 - x}$$

$$5.5(25.5948 - x) = 1.7(-6.1699)$$

$$140.7714 - 5.5x = -10.4888$$

$$-5.5x = -10.4888 - 140.7714$$

$$x = \frac{151.2602}{5.5} = 27.5019 \text{ kg}$$

Interpolasi Akhir:

$$\frac{144 - 95}{144 - 112.5} = \frac{27.1665 - 27.5019}{27.1665 - x}$$

$$49(27.1665 - x) = 31.5(-0.3354)$$

$$1331.1585 - 49x = -10.5651$$

$$-49x = -10.5651 - 1331.1585$$

$$x = \frac{1341.7236}{49} = 27.3821 \text{ kg}$$

8. Untuk Gerakan Mendorong (*Pushing*) Gerobak Dorong berisi Mainan Pola dan Mainan Puzzle dari Stasiun Cat Semprot menuju Stasiun *Packaging*:

Height Percent	2.1 m push One push every								7.6 m push One push every								15.2 m push One push every								30.5 m push One push every								45.7 m push One push every								61.0 m push One push every							
	6	12	1	2	5	30	8		15	22	1	2	5	30	8		25	35	1	2	5	30	8		1	2	5	30	8		1	2	5	30	8		2	5	30	8								
Initial forces																																																
90	20	22	25	25	26	26	31	14	16	21	21	22	22	26	16	18	19	19	20	21	25	15	16	19	19	24	13	14	16	16	20	12	14	14	18													
75	26	29	32	32	34	34	41	18	20	27	27	28	28	34	21	23	25	25	26	27	32	19	21	25	25	31	16	18	21	21	26	16	18	18	23													
50	32	36	40	40	42	42	51	23	25	33	33	35	35	42	26	29	31	31	33	33	40	24	27	31	31	38	20	23	26	26	33	20	22	22	28													
25	38	43	47	47	50	51	61	27	31	40	40	42	42	51	31	35	37	37	40	40	48	28	32	37	37	46	24	27	32	32	39	23	27	27	34													
10	44	49	55	55	58	58	70	31	35	46	46	48	49	58	36	40	43	43	45	46	55	32	37	42	42	53	28	31	36	36	48	27	31	31	39													
90	21	24	26	26	28	28	34	16	18	23	23	25	25	30	18	21	22	22	23	24	28	17	19	22	22	27	14	16	19	19	23	14	16	16	20													
75	28	31	34	34	36	36	44	21	23	20	20	32	32	39	24	27	28	28	30	30	36	21	24	28	28	35	18	21	24	24	30	18	21	20	26													
50	34	38	43	43	45	45	54	26	29	38	38	40	40	48	29	33	35	35	37	38	45	27	30	35	35	44	23	26	30	30	37	22	26	26	32													
25	41	46	51	51	54	55	65	31	35	45	45	48	48	58	35	40	42	42	45	45	54	32	36	42	42	52	27	31	36	36	45	27	31	31	38													
10	47	53	59	59	62	63	75	35	40	52	52	55	56	66	40	46	49	49	52	52	62	37	41	48	48	60	32	36	41	41	52	31	35	35	44													
90	19	22	24	24	25	26	31	13	14	20	20	21	21	26	15	17	19	19	20	20	24	14	16	19	19	23	12	14	16	16	20	12	14	14	17													
75	25	28	31	31	33	33	40	16	19	26	26	27	28	33	19	21	24	24	26	26	31	18	21	24	24	30	16	18	21	21	26	15	18	18	22													
50	31	35	39	39	41	41	50	20	23	32	32	34	35	41	23	27	30	30	32	33	39	23	26	30	30	37	20	22	26	26	32	19	22	22	28													
25	38	42	46	46	49	50	59	25	28	39	39	41	41	50	28	32	36	36	39	39	47	28	31	36	36	45	24	27	31	31	39	23	26	26	33													
10	43	48	53	53	57	57	68	28	32	45	45	47	48	57	32	37	42	42	44	45	54	32	36	41	41	52	27	31	36	36	44	26	30	30	38													
Sustained forces																																																
90	10	13	15	16	18	18	22	8	9	13	13	15	16	18	8	9	11	12	13	14	16	8	10	12	13	16	7	8	10	11	13	7	8	9	11													
75	13	17	21	22	24	25	30	10	13	17	18	20	21	25	11	13	15	16	18	18	22	11	13	16	18	21	10	11	13	15	18	9	11	13	15													
50	17	22	27	28	31	32	38	13	16	22	23	26	27	32	14	17	20	20	23	24	28	15	17	20	23	28	12	14	17	19	23	12	14	16	19													
25	21	27	33	34	38	40	47	16	20	28	29	32	33	39	17	20	24	25	28	29	34	18	21	25	29	34	15	18	21	24	28	15	17	20	24													
10	25	31	38	40	45	46	54	19	23	32	33	38	39	45	20	24	28	29	33	34	40	21	25	29	33	39	18	21	24	28	33	17	20	23	28													
90	10	13	16	17	19	19	23	8	10	13	13	15	15	18	8	10	11	12	13	13	16	8	10	12	13	16	7	8	9	11	13	7	8	9	11													
75	14	18	22	22	25	26	31	11	13	17	18	20	21	25	11	13	15	16	18	18	21	11	13	16	18	21	9	11	13	15	18	9	11	12	15													
50	18	23	28	29	33	34	40	14	17	22	23	26	27	32	14	17	19	20	23	23	28	15	17	20	23	27	12	14	17	19	23	12	14	16	19													
25	22	28	34	35	40	41	49	17	21	27	29	32	33	39	18	21	24	25	28	29	34	18	21	25	28	33	15	18	21	24	28	15	17	20	23													
10	26	33	40	41	46	48	57	20	24	32	33	37	38	45	20	25	28	29	32	33	40	21	25	29	33	39	17	20	24	27	32	17	20	23	27													
90	10	13	16	16	18	19	23	8	10	12	13	14	15	18	8	10	11	12	13	15	18	8	9	11	13	15	7	8	9	11	13	7	8	9	10													
75	14	18	21	22	25	26	31	11	13	17	17	19	20	24	11	13	14	15	17	17	21	11	13	15	17	20	9	11	12	14	17	9	10	12	14													
50	18	23	28	29	32	33	39	14	17	21	22	25	26	31	14	17	19	19	22	22	27	14	16	19	22	26	12	14	16	18	22	12	14	15	18													
25	22	28	34	35	39	41	48	17	21	26	27	31	32	37	18	21	23	24	27	28	33	17	20	24	27	32	14	17	20	23	27	14	17	19	22													
10	26	32	39	41	46	48	56	20	25	30	32	36	37	44	21	25	27	28	31	32	38	20	24	28	32	37	17	20	23	26	31	16	19	22	26													

Note:
 1. Height is vertical floor to hands in cm
 2. Percent pertains to Industrial population
 3. Initial force - required to start motion
 4. Sustained force - required to maintain motion
 4. Italicized values exceed 8 hr physiological criteria

Didapatkan Ketinggian Tangan: 112.5 cm (terletak diantara 95 cm dan 144 cm). Jarak: 10.15 m (terletak diantara 7.6 m dan 15.2 m), Frekuensi mendorongnya: 4 jam sekali (terletak diantara 30 menit dan 8 jam), dan Persentase populasi yang dapat melakukan pekerjaan tersebut tanpa mengalami kelelahan yang berarti sebesar 82.2078% (Terletak diantara 50% dan 75%). Berikut ini merupakan hasil interpolasinya:

Untuk Ketinggian 144 cm, Jarak 15.2 m, persentase 90%:

$$\frac{8 - 0.5}{8 - 4} = \frac{16 - 14}{16 - x}$$

$$7.5(16 - x) = 4(2)$$

$$120 - 7.5x = 8$$

$$-7.5x = 8 - 120$$

$$x = \frac{112}{7.5} = 14.9333 \text{ kg}$$

Untuk Ketinggian 144 cm, Jarak 15.2 m, persentase 75%:

$$\frac{8 - 0.5}{8 - 4} = \frac{22 - 18}{22 - x}$$

$$7.5(22 - x) = 4(4)$$

$$165 - 7.5x = 16$$

$$-7.5x = 16 - 165$$

$$x = \frac{149}{7.5} = 19.8667 \text{ kg}$$

Untuk Ketinggian 144 cm, Jarak 7.6 m, persentase 90%:

$$\frac{8 - 0.5}{8 - 4} = \frac{18 - 16}{18 - x}$$

$$7.5(18 - x) = 4(2)$$

$$135 - 7.5x = 8$$

$$-7.5x = 8 - 135$$

$$x = \frac{127}{7.5} = 16.9333 \text{ kg}$$

Untuk Ketinggian 144 cm, Jarak 7.6 m, persentase 75%:

$$\frac{8 - 0.5}{8 - 4} = \frac{25 - 21}{25 - x}$$

$$7.5(25 - x) = 4(4)$$

$$187.5 - 7.5x = 16$$

$$-7.5x = 16 - 187.5$$

$$x = \frac{171.5}{7.5} = 22.8667 \text{ kg}$$

Untuk Ketinggian 95 cm, Jarak 15.2 m, persentase 90%:

$$\frac{8 - 0.5}{8 - 4} = \frac{16 - 13}{16 - x}$$

$$7.5(16 - x) = 4(3)$$

$$120 - 7.5x = 12$$

$$-7.5x = 12 - 120$$

$$x = \frac{108}{7.5} = 14.4 \text{ kg}$$

Untuk Ketinggian 95 cm, Jarak 15.2 m, persentase 75%:

$$\frac{8 - 0.5}{8 - 4} = \frac{21 - 18}{21 - x}$$

$$7.5(21 - x) = 4(3)$$

$$157.5 - 7.5x = 12$$

$$-7.5x = 12 - 157.5$$

$$x = \frac{145.5}{7.5} = 19.4 \text{ kg}$$

Untuk Ketinggian 95 cm, Jarak 7.6 m, persentase 90%:

$$\frac{8 - 0.5}{8 - 4} = \frac{18 - 15}{18 - x}$$

$$7.5(18 - x) = 4(3)$$

$$135 - 7.5x = 12$$

$$-7.5x = 12 - 135$$

$$x = \frac{123}{7.5} = 16.4 \text{ kg}$$

Untuk Ketinggian 95 cm, Jarak 7.6 m, persentase 75%:

$$\frac{8 - 0.5}{8 - 4} = \frac{25 - 21}{25 - x}$$

$$7.5(25 - x) = 4(4)$$

$$187.5 - 7.5x = 16$$

$$-7.5x = 16 - 187.5$$

$$x = \frac{171.5}{7.5} = 22.8667 \text{ kg}$$

Untuk Ketinggian 144 cm, Jarak 15.2 m:

$$\frac{90 - 75}{90 - 82.2078} = \frac{14.9333 - 19.8667}{14.9333 - x}$$

$$15(14.9333 - x) = 7.7922(-4.9334)$$

$$625 - 15x = -38.442$$

$$-15x = -38.442 - 223.9995$$

$$x = \frac{262.4415}{15} = 17.4961 \text{ kg}$$

Untuk Ketinggian 144 cm, Jarak 7.6 m:

$$\frac{90 - 75}{90 - 82.2078} = \frac{16.9333 - 22.8667}{16.9333 - x}$$

$$15(16.9333 - x) = 7.7922(-5.9334)$$

$$253.9995 - 15x = -46.2342$$

$$-15x = -46.2342 - 253.9995$$

$$x = \frac{300.2337}{15} = 20.0156 \text{ kg}$$

Untuk Ketinggian 95 cm, Jarak 15.2 m:

$$\frac{90 - 75}{90 - 82.2078} = \frac{14.4 - 19.4}{14.4 - x}$$

$$15(14.4 - x) = 7.7922(-5)$$

$$216 - 15x = -38.961$$

$$-15x = -38.961 - 216$$

$$x = \frac{254.961}{15} = 16.9974 \text{ kg}$$

Untuk Ketinggian 95 cm, Jarak 7.6 m:

$$\frac{90 - 75}{90 - 82.2078} = \frac{16.4 - 22.8667}{16.4 - x}$$

$$15(16.4 - x) = 7.7922(-6.4667)$$

$$246 - 15x = -50.3898$$

$$-15x = -50.3898 - 246$$

$$x = \frac{296.3898}{15} = 19.7593 \text{ kg}$$

Untuk Ketinggian 144 cm:

$$\frac{15.2 - 7.6}{15.2 - 10.15} = \frac{17.4961 - 20.0156}{17.4961 - x}$$

$$7.6(17.4961 - x) = 5.05(-2.5195)$$

$$132.9704 - 7.6x = -12.7235$$

$$-7.6x = -12.7235 - 132.9704$$

$$x = \frac{145.6939}{7.6} = 19.1703 \text{ kg}$$

Untuk Ketinggian 95 cm:

$$\frac{15.2 - 7.6}{15.2 - 10.15} = \frac{16.9974 - 19.7593}{16.9974 - x}$$

$$7.6(16.9974 - x) = 5.05(-2.7619)$$

$$129.1802 - 7.6x = -13.9476$$

$$-7.6x = -13.9476 - 129.1802$$

$$x = \frac{143.1278}{7.6} = 18.8326 \text{ kg}$$

Interpolasi Akhir:

$$\frac{144 - 95}{144 - 112.5} = \frac{19.1703 - 18.8326}{19.1703 - x}$$

$$49(19.1703 - x) = 31.5(0.3377)$$

$$939.3447 - 49x = 10.6376$$

$$-49x = 10.6376 - 939.3447$$

$$x = \frac{928.7071}{49} = 18.9532 \text{ kg}$$

9. Untuk Gerakan Mendorong (*Pushing*) Gerobak Dorong berisi Mainan *Puzzle* dari Stasiun Cat Kuas menuju Stasiun *Packaging*.

Height Percent	2.1 m push One push every								7.6 m push One push every								15.2 m push One push every								30.5 m push One push every								45.7 m push One push every								61.0 m push One push every							
	6	12	1	2	5	30	8		15	22	1	2	5	30	8		25	35	1	2	5	30	8		1	2	5	30	8		1	2	5	30	8		2	5	30	8								
Initial forces																																																
90	20	22	25	25	26	26	31	14	16	21	21	22	22	26	16	18	19	19	20	21	25	15	16	19	19	24	13	14	16	16	20	12	14	14	18													
75	26	29	32	32	34	34	41	18	20	27	27	28	28	34	21	23	25	25	26	27	32	19	21	25	25	31	16	18	21	21	26	16	18	18	23													
50	32	36	40	40	42	42	51	23	25	33	33	35	35	42	26	29	31	31	33	33	40	24	27	31	31	38	20	23	26	26	33	20	22	22	28													
25	38	43	47	47	50	51	61	27	31	40	40	42	42	51	31	35	37	37	40	40	48	28	32	37	37	46	24	27	32	32	39	23	27	27	34													
10	44	49	55	55	58	58	70	31	35	46	46	48	48	58	36	40	43	43	45	46	55	32	37	42	42	53	28	31	36	36	48	27	31	31	39													
90	21	24	26	26	28	28	34	16	18	23	23	25	25	30	18	21	22	22	23	24	28	17	19	22	22	27	14	16	19	19	23	14	16	16	20													
75	28	31	34	34	36	36	44	21	23	20	20	32	32	39	24	27	28	28	30	30	36	21	24	28	28	35	18	21	24	24	30	18	21	20	26													
50	34	38	43	43	45	45	54	26	29	38	38	40	40	48	29	33	35	35	37	38	45	27	30	35	35	44	23	26	30	30	37	22	26	26	32													
25	41	46	51	51	54	55	65	31	35	45	45	48	48	58	35	40	42	42	45	45	54	32	36	42	42	52	27	31	36	36	45	27	31	31	38													
10	47	53	59	59	62	63	75	35	40	52	52	55	55	66	40	46	49	49	52	52	62	37	41	48	48	60	32	36	41	41	52	31	35	35	44													
90	19	22	24	24	25	26	31	13	14	20	20	21	21	26	15	17	19	19	20	20	24	14	16	19	19	23	12	14	16	16	20	12	14	14	17													
75	25	28	31	31	33	33	40	16	19	26	26	27	28	33	19	21	24	24	26	26	31	18	21	24	24	30	16	18	21	21	26	15	18	18	22													
50	31	35	39	39	41	41	50	20	23	32	32	34	35	41	23	27	30	30	32	33	39	23	26	30	30	37	20	22	26	26	32	19	22	22	28													
25	38	42	46	46	49	50	59	25	28	39	39	41	41	50	28	32	36	36	39	39	47	28	31	36	36	45	24	27	31	31	39	23	26	26	33													
10	43	48	53	53	57	57	68	28	32	45	45	47	48	57	32	37	42	42	44	45	54	32	36	41	41	52	27	31	36	36	44	26	30	30	38													
Sustained forces																																																
90	10	13	15	16	18	18	22	8	9	13	13	15	15	18	8	9	11	12	13	14	16	8	10	12	13	16	7	8	10	11	13	7	8	9	11													
75	13	17	21	22	24	25	30	10	13	17	18	20	21	25	11	13	15	16	18	18	22	11	13	16	18	21	10	11	13	15	18	9	11	13	15													
50	17	22	27	28	31	32	38	13	16	22	23	26	27	32	14	17	20	20	23	24	28	15	17	20	23	28	12	14	17	19	23	12	14	16	19													
25	21	27	33	34	38	40	47	16	20	28	29	32	33	39	17	20	24	25	28	29	34	18	21	25	29	34	15	18	21	24	28	15	17	20	24													
10	25	31	38	40	45	46	54	19	23	32	33	38	39	45	20	24	28	29	33	34	40	21	25	29	33	39	18	21	24	28	33	17	20	23	28													
90	10	13	16	17	19	19	23	8	10	13	13	15	15	18	8	10	11	12	13	13	16	8	10	12	13	16	7	8	9	11	13	7	8	9	11													
75	14	18	22	22	25	26	31	11	13	17	18	20	21	25	11	13	15	16	18	18	21	11	13	16	18	21	9	11	13	15	18	9	11	12	15													
50	18	23	28	29	33	34	40	14	17	22	23	26	27	32	14	17	19	20	23	23	28	15	17	20	23	27	12	14	17	19	23	12	14	16	19													
25	22	28	34	35	40	41	49	17	21	27	29	32	33	39	18	21	24	25	28	29	34	18	21	25	28	33	15	18	21	24	28	15	17	20	23													
10	26	33	40	41	46	48	57	20	24	32	33	37	38	45	20	25	28	29	32	33	40	21	25	29	33	39	17	20	24	27	32	17	20	23	27													
90	10	13	16	16	18	19	23	8	10	12	13	14	15	18	8	10	11	11	12	13	15	8	9	11	13	15	7	8	9	11	13	7	8	9	10													
75	14	18	21	22	25	26	31	11	13	17	17	19	20	24	11	13	14	15	17	17	21	11	13	15	17	20	9	11	12	14	17	9	10	12	14													
50	18	23	28	29	32	33	39	14	17	21	22	25	26	31	14	17	19	19	22	22	27	14	16	19	22	26	12	14	16	18	22	12	14	15	18													
25	22	28	34	35	39	41	48	17	21	26	27	31	32	37	18	21	23	24	27	28	33	17	20	24	27	32	14	17	20	23	27	14	17	19	22													
10	26	32	39	41	46	48	56	20	25	30	32	36	37	44	21	25	27	28	31	32	38	20	24	28	32	37	17	20	23	26	31	16	19	22	26													

Note:
 1. Height is vertical floor to hands in cm
 2. Percent pertains to Industrial population
 3. Initial force - required to start motion
 4. Sustained force - required to maintain motion
 5. Italicized values exceed 8 hr physiological criteria

Didapatkan Ketinggian Tangan: 112.5 cm (terletak diantara 95 cm dan 144 cm). Jarak: 12.54 m (terletak diantara 7.6 m dan 15.2 m), Frekuensi mendorongnya: 4 jam sekali (terletak diantara 30 menit dan 8 jam), dan Persentase populasi yang dapat melakukan pekerjaan tersebut tanpa mengalami kelelahan yang berarti sebesar 77.7508% (Terletak diantara 50% dan 75%). Berikut ini merupakan hasil interpolasinya:

Untuk Ketinggian 144 cm, Jarak 15.2 m, persentase 90%: **14.9333 kg**

Untuk Ketinggian 144 cm, Jarak 15.2 m, persentase 75%: **19.8667 kg**

Untuk Ketinggian 144 cm, Jarak 7.6 m, persentase 90%: **16.9333 kg**

Untuk Ketinggian 144 cm, Jarak 7.6 m, persentase 75%: **22.8667 kg**

Untuk Ketinggian 95 cm, Jarak 15.2 m, persentase 90%: **14.4 kg**

Untuk Ketinggian 95 cm, Jarak 15.2 m, persentase 75%: **19.4 kg**

Untuk Ketinggian 95 cm, Jarak 7.6 m, persentase 90%: **16.4 kg**

Untuk Ketinggian 95 cm, Jarak 7.6 m, persentase 75%: **22.8667 kg**

Untuk Ketinggian 144 cm, Jarak 15.2 m:

$$\frac{90 - 75}{90 - 77.7508} = \frac{14.9333 - 19.8667}{14.9333 - x}$$

$$15(14.9333 - x) = 12.2492(-4.9334)$$

$$625 - 15x = -60.4302$$

$$-15x = -60.4302 - 223.9995$$

$$x = \frac{284.4297}{15} = 18.962 \text{ kg}$$

Untuk Ketinggian 144 cm, Jarak 7.6 m:

$$\frac{90 - 75}{90 - 77.7508} = \frac{16.9333 - 22.8667}{16.9333 - x}$$

$$15(16.9333 - x) = 12.2492(-5.9334)$$

$$253.9995 - 15x = -72.6794$$

$$-15x = -72.6794 - 253.9995$$

$$x = \frac{326.6789}{15} = 21.7786 \text{ kg}$$

Untuk Ketinggian 95 cm, Jarak 15.2 m:

$$\frac{90 - 75}{90 - 77.7508} = \frac{14.4 - 19.4}{14.4 - x}$$

$$15(14.4 - x) = 12.2492(-5)$$

$$216 - 15x = -61.246$$

$$-15x = -61.246 - 216$$

$$x = \frac{277.246}{15} = 18.4831 \text{ kg}$$

Untuk Ketinggian 95 cm, Jarak 7.6 m:

$$\frac{90 - 75}{90 - 77.7508} = \frac{16.4 - 22.8667}{16.4 - x}$$

$$15(16.4 - x) = 12.2492(-6.4667)$$

$$246 - 15x = -79.2119$$

$$-15x = -79.2119 - 246$$

$$x = \frac{325.2119}{15} = 21.6808 \text{ kg}$$

Untuk Ketinggian 144 cm:

$$\frac{15.2 - 7.6}{15.2 - 12.54} = \frac{18.962 - 21.7786}{18.962 - x}$$

$$7.6(18.962 - x) = 2.66(-2.8166)$$

$$144.1112 - 7.6x = -7.4922$$

$$-7.6x = -7.4922 - 144.1112$$

$$x = \frac{151.6034}{7.6} = 19.9478 \text{ kg}$$

Untuk Ketinggian 95 cm:

$$\frac{15.2 - 7.6}{15.2 - 12.54} = \frac{18.4831 - 21.6808}{18.4831 - x}$$

$$7.6(18.4831 - x) = 2.66(-3.1977)$$

$$140.4716 - 7.6x = -8.5059$$

$$-7.6x = -8.5059 - 140.4716$$

$$x = \frac{148.9775}{7.6} = 19.6023 \text{ kg}$$

Interpolasi Akhir:

$$\frac{144 - 95}{144 - 112.5} = \frac{19.9478 - 19.6023}{19.9478 - x}$$

$$49(19.9478 - x) = 31.5(0.3455)$$

$$977.4422 - 49x = 10.8833$$

$$-49x = 10.8833 - 977.4422$$

$$x = \frac{966.5589}{49} = 19.7257 \text{ kg}$$

10. Untuk Gerakan Membawa (*Carrying*) Kardus Berisi Potongan Kayu yang Sudah Digerinda dari Stasiun Gerinda menuju Stasiun *Press*:

Maximum Acceptable Weight of Carry (kg)

Height	Percent	2.1 m carry One carry every							4.3 m carry One carry every							8.5 m carry One carry every						
		6 s	12 s	1 min	2 min	5 min	30 min	8 hr	6 s	12 s	1 min	2 min	5 min	30 min	8 hr	6 s	12 s	1 min	2 min	5 min	30 min	8 hr
Males																						
111	90	10	14	17	17	19	21	25	9	11	15	15	17	19	22	10	11	13	13	15	17	20
	75	14	19	23	23	26	29	34	13	16	21	21	23	26	30	13	15	18	18	20	23	27
	50	19	25	30	30	33	38	44	17	20	27	27	30	34	39	17	19	23	24	26	29	35
	25	23	30	37	37	41	46	54	20	25	33	33	37	41	48	21	24	29	29	32	36	43
	10	27	35	43	43	48	54	63	24	29	38	39	43	48	57	24	28	34	34	38	42	50
79	90	13	17	21	21	23	26	31	11	14	18	19	21	23	27	13	15	17	18	20	22	26
	75	18	23	28	29	32	36	42	16	19	25	25	28	32	37	17	20	24	24	27	30	35
	50	23	30	37	37	41	46	54	20	25	32	33	36	41	48	22	26	31	31	35	39	46
	25	28	37	45	46	51	57	67	25	30	40	40	45	50	59	27	32	38	38	42	48	56
	10	33	43	53	53	59	66	78	29	35	47	47	52	59	69	32	38	44	45	50	56	65
Females																						
105	90	11	12	13	13	13	13	18	9	10	13	13	13	13	18	10	11	12	12	12	12	16
	75	13	14	15	15	16	16	21	11	12	15	15	16	16	21	12	13	14	14	14	14	19
	50	15	16	18	18	18	18	25	12	13	18	18	18	18	24	14	15	16	16	16	16	22
	25	17	18	20	20	21	21	28	14	15	20	20	21	21	28	15	17	18	18	19	19	25
	10	19	20	22	22	23	23	31	16	17	22	22	23	23	31	17	19	20	20	21	21	28
72	90	13	14	16	16	16	16	22	10	11	14	14	14	14	20	12	12	14	14	14	14	19
	75	15	17	18	18	19	19	25	11	13	16	16	17	17	23	14	15	16	16	17	17	23
	50	17	19	21	21	22	22	29	13	15	19	19	20	20	26	16	17	19	19	20	20	26
	25	20	22	24	24	25	25	33	15	17	22	22	22	22	30	18	19	21	22	22	22	30
	10	22	24	27	27	28	28	37	17	19	24	24	25	25	33	20	21	24	24	25	25	33

- Notes:
1. Height is vertical distance floor to hands
 2. Percent pertains to industrial population
 3. Italicized values exceed 8 hr physiological criteria

Didapatkan Ketinggian: 93.3 cm (terletak diantara 111 cm dan 79 cm). Jarak: 7.05 m (terletak diantara 4.3 m dan 8.5 m), Frekuensi Membawanya: 4 jam sekali (terletak diantara 8 jam dan 30 menit), dan Persentase populasi yang dapat melakukan pekerjaan tersebut tanpa mengalami kelelahan yang berarti sebesar 88.8325% (Terletak diantara 75% dan 90%). Berikut ini merupakan hasil interpolasinya:

Untuk Ketinggian 111 cm, Jarak 4.3 m, persentase 90%: 20.4 kg

Untuk Ketinggian 111 cm, Jarak 4.3 m, persentase 75%: 27.8667 kg

Untuk Ketinggian 111 cm, Jarak 8.5 m, persentase 90%: 18.4 kg

Untuk Ketinggian 111 cm, Jarak 8.5 m, persentase 75%: 24.8667 kg

Untuk Ketinggian 79 cm, Jarak 4.3 m, persentase 90%: 24.8667 kg

Untuk Ketinggian 79 cm, Jarak 4.3 m, persentase 75%: 34.3333 kg

Untuk Ketinggian 79 cm, Jarak 8.5 m, persentase 90%: 23.8667 kg

Untuk Ketinggian 79 cm, Jarak 8.5 m, persentase 75%: 32.3333 kg

Untuk Ketinggian 111 cm, Jarak 4.3 m:

$$\frac{90 - 75}{90 - 88.8325} = \frac{20.4 - 27.8667}{20.4 - x}$$

$$15(20.4 - x) = 1.1675(-7.4667)$$

$$306 - 15x = -8.7174$$

$$-15x = -8.7174 - 306$$

$$x = \frac{314.7174}{15} = 20.9812 \text{ kg}$$

Untuk Ketinggian 111 cm, Jarak 8.5 m:

$$\frac{90 - 75}{90 - 88.8325} = \frac{18.4 - 24.8667}{18.4 - x}$$

$$15(18.4 - x) = 1.1675(-6.4667)$$

$$276 - 15x = -7.5499$$

$$-15x = -7.5499 - 276$$

$$x = \frac{283.5499}{15} = 18.9033 \text{ kg}$$

Untuk Ketinggian 79 cm, Jarak 4.3 m:

$$\frac{90 - 75}{90 - 88.8325} = \frac{24.8667 - 34.3333}{24.8667 - x}$$

$$15(24.8667 - x) = 1.1675(-9.4666)$$

$$373.0005 - 15x = -11.0523$$

$$-15x = -11.0523 - 373.0005$$

$$x = \frac{384.0528}{15} = 25.6035 \text{ kg}$$

Untuk Ketinggian 79 cm, Jarak 8.5 m:

$$\frac{90 - 75}{90 - 88.8325} = \frac{23.8667 - 32.3333}{23.8667 - x}$$

$$15(23.8667 - x) = 1.1675(-8.4666)$$

$$358.0005 - 15x = -9.8848$$

$$-15x = -9.8848 - 358.0005$$

$$x = \frac{367.8853}{15} = 24.5257 \text{ kg}$$

Untuk Ketinggian 111 cm:

$$\frac{8.5 - 4.3}{8.5 - 7.05} = \frac{18.9033 - 20.9812}{18.9033 - x}$$

$$4.2(18.9033 - x) = 1.45(-2.0779)$$

$$79.3939 - 4.2x = -3.013$$

$$-4.2x = -3.013 - 79.3939$$

$$x = \frac{82.4069}{4.2} = 19.6207 \text{ kg}$$

Untuk Ketinggian 79 cm:

$$\frac{8.5 - 4.3}{8.5 - 7.05} = \frac{24.5257 - 25.6035}{24.5257 - x}$$

$$4.2(24.5257 - x) = 1.45(-1.0778)$$

$$103.0079 - 4.2x = -1.5628$$

$$-4.2x = -1.5628 - 103.0079$$

$$x = \frac{104.5707}{4.2} = 24.8978 \text{ kg}$$

Interpolasi Akhir:

$$\frac{111 - 79}{111 - 93.3} = \frac{19.6207 - 24.8978}{19.6207 - x}$$

$$32(19.6207 - x) = 17.7(-5.2771)$$

$$627.8624 - 32x = -93.4047$$

$$-32x = -93.4047 - 627.8624$$

$$x = \frac{721.2671}{32} = 22.5396 \text{ kg}$$

11. Untuk Gerakan Mendorong (*Pushing*) Gerobak Dorong berisi Kepingan *Puzzle* dari Stasiun *Press* menuju Stasiun *Cat Semprot*:

Height Percent	2.1 m push One push every								7.6 m push One push every								15.2 m push One push every								30.5 m push One push every								45.7 m push One push every								61.0 m push One push every																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
	s	1	2	5	30	8	15	22	1	2	5	30	8	15	22	1	2	5	30	8	1	2	5	30	8	1	2	5	30	8	1	2	5	30	8	15	22	1	2	5	30	8																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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- Note:
1. Height is vertical floor to hands in cm
 2. Percent pertains to industrial population
 3. Initial force - required to start motion
 4. Sustained force - required to maintain motion
4. Italicized values exceed 8 hr physiological criteria

Didapatkan Ketinggian Tangan: 112.5 cm (terletak diantara 95 cm dan 144 cm). Jarak: 7.95 m (terletak diantara 7.6 m dan 15.2 m), Frekuensi mendorongnya: 8 jam sekali, dan Persentase populasi yang dapat melakukan pekerjaan tersebut tanpa mengalami kelelahan yang berarti sebesar 71.1883% (Terletak diantara 50% dan 75%). Berikut ini merupakan hasil interpolasinya:

Untuk Ketinggian Tangan 144 cm, Jarak 15.2 m:

$$\frac{75 - 50}{75 - 71.1883} = \frac{22 - 28}{22 - x}$$

$$25(22 - x) = 3.8117(-6)$$

$$550 - 25x = -26.6819$$

$$-25x = -22.8702 - 550$$

$$x = \frac{572.8702}{25} = 22.9148 \text{ kg}$$

Untuk Ketinggian Tangan 144 cm, Jarak 7.6 m:

$$\frac{75 - 50}{75 - 71.1883} = \frac{25 - 32}{25 - x}$$

$$25(25 - x) = 3.8117(-7)$$

$$625 - 25x = -26.6819$$

$$-25x = -26.6819 - 625$$

$$x = \frac{651.6819}{25} = 26.0673 \text{ kg}$$

Untuk Ketinggian Tangan 95 cm, Jarak 7.6 m:

$$\frac{75 - 50}{75 - 71.1883} = \frac{21 - 28}{21 - x}$$

$$25(21 - x) = 3.8117(-7)$$

$$525 - 25x = -26.6819$$

$$-25x = -26.6819 - 525$$

$$x = \frac{551.6819}{25} = 22.0673 \text{ kg}$$

Untuk Ketinggian Tangan 95 cm, Jarak 7.6 m:

$$\frac{75 - 50}{75 - 71.1883} = \frac{25 - 32}{25 - x}$$

$$25(25 - x) = 3.8117(-7)$$

$$625 - 25x = -26.6819$$

$$-25x = -26.6819 - 625$$

$$x = \frac{651.6819}{25} = 26.0673 \text{ kg}$$

Untuk Ketinggian Tangan 144 cm:

$$\frac{15.2 - 7.6}{15.2 - 7.95} = \frac{22.9148 - 26.0673}{22.9148 - x}$$

$$7.6(22.9148 - x) = 7.25(-3.1525)$$

$$174.1525 - 7.6x = -22.8556$$

$$-7.6x = -22.8556 - 174.1525$$

$$x = \frac{197.0081}{7.6} = 25.9221 \text{ kg}$$

Untuk Ketinggian Tangan 95 cm:

$$\frac{15.2 - 7.6}{15.2 - 7.95} = \frac{22.0673 - 26.0673}{22.0673 - x}$$

$$7.6(22.0673 - x) = 7.25(-4)$$

$$167.7115 - 7.6x = -29$$

$$-7.6x = -29 - 167.7115$$

$$x = \frac{196.7115}{7.6} = 25.8831 \text{ kg}$$

Interpolasi Akhir:

$$\frac{144 - 95}{144 - 112.5} = \frac{25.9221 - 25.8831}{25.9221 - x}$$

$$49(25.9221 - x) = 31.5(0.039)$$

$$1270.1829 - 49x = 1.2285$$

$$-49x = 1.2285 - 1270.1829$$

$$x = \frac{1268.9544}{49} = 25.897 \text{ kg}$$

