

Lampiran 1

Tabel 11. Daftar Hasil besar lingkaran paha dan panjang tungkai Kecepatan lari
60 meter

No	(x1)	(x2)	(Y)
1	48	100	8,63
2	57	91	7,89
3	55	94	7,87
4	61	91	8,14
5	56	101	8,37
6	60	107	8,17
7	56	102	8,79
8	57	96	7,66
9	56	98	9,52
10	48	97	8,79
11	54	86	7,91
12	62	88	7,73
13	55	98	8,18
14	62	88	7,86
15	56	89	7,94
16	45	100	8,68
17	56	93	8,15
18	58	91	8,17
19	56	103	7,72
20	54	106	8,88
Jumlah	1112	1919	165,05

Lampiran 2

Tabel 12. Data Hasil besar lingkaran paha, panjang tungkai dan kecepatan lari 60 meter

No	(x1)	(x2)	(Y)	X1 ²	X2 ²	Y ²
1	48	100	8,63	2304	10000	74,48
2	57	91	7,89	3249	8281	62,25
3	55	94	7,87	3025	8836	61,94
4	61	91	8,14	3721	8281	66,26
5	56	101	8,37	3136	10201	70,06
6	60	107	8,17	3600	11449	66,75
7	56	102	8,79	3136	10404	77,26
8	57	96	7,66	3249	9216	58,68
9	56	98	9,52	3136	9604	90,63
10	48	97	8,79	2304	9409	77,26
11	54	86	7,91	2916	7396	62,57
12	62	88	7,73	3844	7744	59,75
13	55	98	8,18	3025	9604	66,91
14	62	88	7,86	3844	7744	61,78
15	56	89	7,94	3136	7921	63,04
16	45	100	8,68	2025	10000	75,34
17	56	93	8,15	3136	8649	66,42
18	58	91	8,17	3364	8281	66,75
19	56	103	7,72	3136	10609	59,60
20	54	106	8,88	2916	11236	78,85
Jumlah	1112	1919	165,05	62202	184865	1.366,59

Lampiran 3

Menentukan T skor besar lingkar paha ,panjang tungkai dan kecepatan lari 60 meter. Rumus :

Contoh : n ke-1 dar X

$$\begin{aligned}
 \text{T skor} &= 50 \pm 10 \frac{(X - \bar{X}_1)}{SD} \\
 \text{T skor} &= 50 + 10 \frac{(48 - 55.60)}{4.44} \\
 &= 50 + 10 (0.711) \\
 &= 50 + (7.11) \\
 &= 57.11
 \end{aligned}$$

Contoh : n ke-1 dari X_2

$$\begin{aligned}
 \text{T skor} &= 50 + 10 \frac{(100 - 95.95)}{6.23} \\
 &= 50 + 10(0.65) \\
 &= 50 + (6.50) \\
 &= 56.50
 \end{aligned}$$

Contoh : n ke-1 dari Y

$$\begin{aligned}
 \text{T skor} &= 50 + 10 \frac{(8.63 - 8.25)}{0.49} \\
 &= 50 + 10 (0.775) \\
 &= 50 + (7.75) \\
 &= 57.75
 \end{aligned}$$

Lampiran 4

Tabel 13. Data Mentah Yang Telah Di Rubah Dalam T Skor

No	Besar Lingkar Paha		Panjang Tungkai		Kecepatan Lari 60 Meter	
	DATA	T SKOR	DATA	T SKOR	DATA	T SKOR
1	48	67.11	100	56.50	8.63	57.75
2	57	46.85	91	42.05	7.89	42.56
3	55	51.35	94	46.87	7.87	42.15
4	61	37.84	91	42.05	8.14	47.69
5	56	49.10	101	58.11	8.37	52.41
6	60	40.09	107	67.74	8.17	48.31
7	56	49.10	102	59.71	8.79	61.03
8	57	46.85	96	50.08	7.66	37.84
9	56	49.10	98	53.29	9.52	76.01
10	48	67.11	97	51.69	8.79	61.03
11	54	53.60	86	34.02	7.91	42.97
12	62	35.59	88	37.23	7.73	39.28
13	55	51.35	98	53.29	8.18	48.51
14	62	35.59	88	37.23	7.86	41.95
15	56	49.10	89	38.84	7.94	43.59
16	45	73.87	100	56.50	8.68	58.77
17	56	49.10	93	45.26	8.15	47.90
18	58	44.60	91	42.05	8.17	48.31
19	56	49.10	103	61.32	7.72	39.07
20	54	53.60	106	66.14	8.88	62.87
	1,112	1,000	1,919	1,000	165.05	1,000

Lampiran 5

Tabel 14. Datar Hasil besar lingkaran paha, panjang tungkai, kecepatan lari 60 meter yang telah di T-Skor

NO	X ₁	X ₂	y	x ₁ ²	X ₂ ²	y ²	x ₁ y	x ₂ y
1	67.11	56.50	57.75	4,503.97	3,192.59	3,334.51	3,875.37	3,262.78
2	46.85	42.05	42.56	2,194.72	1,768.36	1,811.57	1,993.96	1,789.84
3	51.35	46.87	42.15	2,636.92	2,196.70	1,776.81	2,164.55	1,975.63
4	37.84	42.05	47.69	1,432.00	1,768.36	2,274.51	1,804.74	2,005.53
5	49.10	58.11	52.41	2,410.75	3,376.62	2,746.89	2,573.34	3,045.52
6	40.09	67.74	48.31	1,607.47	4,589.08	2,333.60	1,936.80	3,272.47
7	49.10	59.71	61.03	2,410.75	3,565.80	3,724.41	2,996.44	3,644.24
8	46.85	50.08	37.84	2,194.72	2,508.03	1,432.14	1,772.89	1,895.22
9	49.10	53.29	76.01	2,410.75	2,840.00	5,776.83	3,731.82	4,050.45
10	67.11	51.69	61.03	4,503.97	2,671.44	3,724.41	4,095.68	3,154.29
11	53.60	34.02	42.97	2,873.22	1,157.60	1,846.67	2,303.45	1,462.09
12	35.59	37.23	39.28	1,266.66	1,386.44	1,542.90	1,397.98	1,462.58
13	51.35	53.29	48.51	2,636.92	2,840.00	2,353.46	2,491.16	2,585.31
14	35.59	37.23	41.95	1,266.66	1,386.44	1,759.55	1,492.90	1,561.89
15	49.10	38.84	43.59	2,410.75	1,508.59	1,899.95	2,140.16	1,693.00
16	73.87	56.50	58.77	5,456.21	3,192.59	3,454.04	4,341.19	3,320.74
17	49.10	45.26	47.90	2,410.75	2,048.76	2,294.12	2,351.71	2,167.97
18	44.60	42.05	48.31	1,988.83	1,768.36	2,333.60	2,154.33	2,031.42
19	49.10	61.32	39.07	2,410.75	3,760.14	1,526.83	1,918.54	2,396.06
20	53.60	66.14	62.87	2,873.22	4,374.11	3,953.20	3,370.23	4,158.33
JUMLAH	1,000	1,000	1,000	51,900	51,900	51,900	50,907.27	50,935.36

Lampiran 6

Menghitung rata-dan simpangan baku

1. Variabel panjang tungkai x_1

$$\sum X_1 = 1000 \qquad \sum X_1^2 = 51900 \qquad n=20$$

a. Rata-rata

$$= \frac{\sum X_1}{n}$$

$$= \frac{1000}{20}$$

$$= 50$$

b. Simpangan baku

$$= \frac{\sqrt{n \sum X_1^2 - (\sum X_1)^2}}{n(n-1)}$$

$$= \frac{\sqrt{20 \cdot 51900 - 1000^2}}{20(20-1)}$$

$$= \sqrt{100}$$

$$= 10$$

c. Varians

$$= 100$$

2. Variabel panjang tungkai x_2

$$\sum X_2 = 1000 \qquad \sum X_2^2 = 51900 \qquad n = 20$$

a. Rata-rata $= \frac{\sum X_2}{n}$

$$= \frac{1000}{20}$$

$$= 50$$

b. Simpangan baku $= \frac{\sqrt{n \sum X_2^2 - (\sum X_2)^2}}{n(n-1)}$

$$= \frac{\sqrt{20 \cdot 51900 - 1000^2}}{20(20-1)}$$

$$= \sqrt{100}$$

$$= 10$$

c. Varians $= 100$

3. Variabel panjang tungkai y

$$\sum y = 1000 \qquad \sum y^2 = 51900 \qquad n=20$$

a. Rata-rata $= \frac{\sum y}{n}$

$$= \frac{1000}{20}$$

$$= 50$$

b. Simpangan baku $= \frac{\sqrt{n \sum y^2 - (\sum y)^2}}{n(n-1)}$

$$= \frac{\sqrt{20.51900 - 1000^2}}{20(20-1)}$$

$$= \sqrt{100}$$

$$= 10$$

C. Varians

$$= 100$$

Lampiran7

Tabel 15 Data Hasil besar lingkaran paha, panjang tungkai, kecepatan lari 60 meter data sudah T-skor

No	T skor X ₁	T skor X ₂	T skor Y	X ₁ ²	X ₂ ²	Y ²	X ₁ Y	X ₂ Y	X ₁ X ₂
1	67.11	56.50	57.75	4,503.97	3,192.59	3,334.51	3,875.37	3,262.78	3,792.01
2	46.85	42.05	42.56	2,194.72	1,768.36	1,811.57	1,993.96	1,789.84	1,970.04
3	51.35	46.87	42.15	2,636.92	2,196.70	1,776.81	2,164.55	1,975.63	2,406.76
4	37.84	42.05	47.69	1,432.00	1,768.36	2,274.51	1,804.74	2,005.53	1,591.32
5	49.10	58.11	52.41	2,410.75	3,376.62	2,746.89	2,573.34	3,045.52	2,853.10
6	40.09	67.74	48.31	1,607.47	4,589.08	2,333.60	1,936.80	3,272.47	2,716.03
7	49.10	59.71	61.03	2,410.75	3,565.80	3,724.41	2,996.44	3,644.24	2,931.94
8	46.85	50.08	37.84	2,194.72	2,508.03	1,432.14	1,772.89	1,895.22	2,346.15
9	49.10	53.29	76.01	2,410.75	2,840.00	5,776.83	3,731.82	4,050.45	2,616.59
10	67.11	51.69	61.03	4,503.97	2,671.44	3,724.41	4,095.68	3,154.29	3,468.73
11	53.60	34.02	42.97	2,873.22	1,157.60	1,846.67	2,303.45	1,462.09	1,823.74
12	35.59	37.23	39.28	1,266.66	1,386.44	1,542.90	1,397.98	1,462.58	1,325.20
13	51.35	53.29	48.51	2,636.92	2,840.00	2,353.46	2,491.16	2,585.31	2,736.57
14	35.59	37.23	41.95	1,266.66	1,386.44	1,759.55	1,492.90	1,561.89	1,325.20
15	49.10	38.84	43.59	2,410.75	1,508.59	1,899.95	2,140.16	1,693.00	1,907.05
16	73.87	56.50	58.77	5,456.21	3,192.59	3,454.04	4,341.19	3,320.74	4,173.66
17	49.10	45.26	47.90	2,410.75	2,048.76	2,294.12	2,351.71	2,167.97	2,222.40
18	44.60	42.05	48.31	1,988.83	1,768.36	2,333.60	2,154.33	2,031.42	1,875.36
19	49.10	61.32	39.07	2,410.75	3,760.14	1,526.83	1,918.54	2,396.06	3,010.78
20	53.60	66.14	62.87	2,873.22	4,374.11	3,953.20	3,370.23	4,158.33	3,545.11
JUMLAH	1,000	1,000	1,000	51,900	51,900	51,900	50,907.27	50,935.36	50,637.72

Lampiran 8

Mencari persamaan regresi

1. Regresi Y atas X_1

Diketahui : $\sum X_1 = 1000$

$$\sum Y^2 = 51900$$

$$\sum X_1^2 = 51900$$

$$\sum X_1 Y = 50907.27$$

$$\sum Y = 1000$$

$$a = \frac{(\sum Y)(\sum X_1^2) - (\sum X_1) \sum X_1 Y}{n(\sum X_1^2) - (\sum X_1)^2}$$

$$= \frac{(1000)(51900) - (1000)(50907.27)}{20(51900) - (1000)^2}$$

$$= \frac{519000 - 50907266.68}{1038000 - 1000000}$$

$$= \frac{992733.31}{38000}$$

$$= 26.12$$

$$b = \frac{n(\sum X_1 Y) - (\sum X_1)(\sum Y)}{n(\sum X_1^2) - (\sum X_1)^2}$$

$$= \frac{20(50907.27) - (1000)(1000)}{20(51900) - (1000)^2}$$

$$= \frac{1018145.3 - 1000000}{1038000 - 1000000}$$

$$= \frac{18145.33}{38000}$$

$$= 0.48$$

Jadi persamaan regresi Y terhadap X_1 adalah $Y = 26.12 + 0.48$

2. Regresi Y atas X_2

Diketahui : $\sum X_2 = 1000$

$$\sum Y^2 = 51900$$

$$\sum X_2^2 = 51900$$

$$\sum X_2 Y = 50935.36$$

$$\sum Y = 1000$$

$$a = \frac{(\sum Y)(\sum X_{12}) - (\sum X_1) \sum X_1 Y}{n(\sum X_{12}) - (\sum X_1)^2}$$

$$= \frac{(1000)(51900) - (1000)(50935.36)}{20(51900) - (1000)^2}$$

$$= \frac{519000 - 50935358.06}{1038000 - 1000000}$$

$$= \frac{964641.9417}{38000}$$

$$= 25.39$$

$$b = \frac{n(\sum X_1 Y) - (\sum X_1)(\sum Y)}{n(\sum X_{12}) - (\sum X_1)^2}$$

$$= \frac{20(50935.36) - (1000)(1000)}{20(51900) - (1000)^2}$$

$$= \frac{1018707.2 - 1000000}{1038000 - 1000000}$$

$$= \frac{18707.16}{38000}$$

$$= 0.49$$

Jadi persamaan regresi Y terhadap X_1 adalah $Y = 25.39 + 0.49$

3. Regresi ganda Y atas X_1 dan X_2

Dicari dengan rumus sebagai berikut.

$$b_0 = \bar{Y} - b_0\bar{X}_1 - b_2\bar{X}_2$$

$$b_1 = \frac{(\sum X_2^2)(\sum X_1Y) - (\sum X_1X_2)(\sum X_2Y)}{(\sum X_1^2)(\sum X_2^2) - (\sum X_1X_2)}$$

$$b_2 = \frac{(\sum X_1^2)(\sum X_1Y) - (\sum X_1X_2)(\sum X_1Y)}{(\sum X_1^2)(\sum X_2^2) - (\sum X_1X_2)}$$

Dimana :

$$\sum Y^2 = \sum Y^2 - \frac{(\sum Y)^2}{n}$$

$$\sum X_1^2 = \sum X_1^2 - \frac{(\sum X_1)^2}{n}$$

$$\sum X_2^2 = \sum X_2^2 - \frac{(\sum X_2)^2}{n}$$

$$\sum X_1Y = \sum X_1Y - \frac{(\sum X_1)(\sum Y)}{n}$$

$$\sum X_2Y = \sum X_2Y - \frac{(\sum X_2)(\sum Y)}{n}$$

$$(\sum X_1X_2) = (\sum X_1X_2) - \frac{(\sum X_1)(\sum X_2)}{n}$$

Diketahui :

$$\begin{array}{lll}
 \sum X_1 = 1000 & \sum X_{1^2} = 51900 & \sum X_1 Y = 50907.27 \\
 \sum X_2 = 1000 & \sum X_{2^2} = 51900 & \sum X_2 Y = 50935.36 \\
 \sum Y = 1000 & \sum Y^2 = 51900 & \sum X_1 X_2 = 50637.72 \\
 \bar{X}_1 = 50 & \bar{X}_2 = 50 & \bar{Y} = 50
 \end{array}$$

Jadi :

$$\begin{aligned}
 \sum Y^2 &= \sum Y^2 - \frac{(\sum Y)^2}{n} \\
 &= 51900 - \frac{(1000)^2}{20} \\
 &= 1900
 \end{aligned}$$

$$\begin{aligned}
 \sum X_{1^2} &= \sum X_{1^2} - \frac{(\sum X_1)^2}{n} \\
 &= 51900 - \frac{(1000)^2}{20} \\
 &= 1900
 \end{aligned}$$

$$\begin{aligned}
 \sum X_{2^2} &= \sum X_{2^2} - \frac{(\sum X_2)^2}{n} \\
 &= 51900 - \frac{(1000)^2}{20} \\
 &= 1900
 \end{aligned}$$

$$\begin{aligned}
 \sum X_1 Y &= \sum X_1 Y - \frac{(\sum X_1)(\sum Y)}{n} \\
 &= 50907.27 - \frac{(1000)(1000)}{20} \\
 &= 907.27
 \end{aligned}$$

$$\begin{aligned}
 \sum X_2 Y &= \sum X_2 Y - \frac{(\sum X_2)(\sum Y)}{n} \\
 &= 50935.36 - \frac{(1000)(1000)}{20} \\
 &= 935.36
 \end{aligned}$$

$$\begin{aligned}
 (\sum X_1 X_2) &= (\sum X_1 X_2) - \frac{(\sum X_1)(\sum X_2)}{n} \\
 &= 50637.72 - \frac{(1000)(1000)}{20} \\
 &= 637.72
 \end{aligned}$$

$$\begin{aligned}
 b_1 &= \frac{(\sum X_2^2)(\sum X_1 Y) - (\sum X_1 X_2)(\sum X_2 Y)}{(\sum X_1^2)(\sum X_2^2) - (\sum X_1 X_2)^2} \\
 &= \frac{(51900)(50907.27) - (50935.36)(50637.72)}{(51900)(51900) - (50637.72)^2} \\
 &= \frac{1127305.56}{3203306.94}
 \end{aligned}$$

$$= 0.35$$

$$\begin{aligned}
 b_2 &= \frac{(\sum X_1^2)(\sum X_2 Y) - (\sum X_1 X_2)(\sum X_1 Y)}{(\sum X_1^2)(\sum X_2^2) - (\sum X_1 X_2)^2} \\
 &= \frac{(51900)(50935.36) - (50637.72)(50907.27)}{(51900)(51900) - (50637.72)^2} \\
 &= \frac{1198593.75}{3203306.94}
 \end{aligned}$$

$$= 0.37$$

$$\begin{aligned}
 b_0 &= \bar{Y} - b_1 \bar{X}_1 - b_2 \bar{X}_2 \\
 &= 50 - (0.35)(50) - (0.37)(50) \\
 &= 50 - (17.60 - 18.71) \\
 &= 13.70
 \end{aligned}$$

Jadi persamaan regresi ganda Y atas X_1 dan X_2 adalah $Y = 13.70 + 0.35X_1 + 0.37X_2$

Lampiran 7

Mencari koefisien korelasi dan uji keberartian koefisien korelasi

1. Koefisien Korelasi ry_1

$$\begin{aligned}
 r &= \frac{n(\sum X_1 Y) - (\sum X_1)(\sum Y)}{\sqrt{[n(\sum X_1^2) - (\sum X_1)^2] \cdot [n(\sum Y^2) - (\sum Y)^2]}} \\
 &= \frac{20(50907.27) - (1000)(1000)}{\sqrt{[20(51900) - (1000)^2][20(51900) - (1000)^2]}} \\
 &= \frac{1018145.33 - 1000000}{\sqrt{[38000][38000]}} \\
 &= \frac{18145.33}{3800} \\
 &= 0.48
 \end{aligned}$$

2. Uji keberartian koefisien korelasi

$$\begin{aligned}
 t_{thitung} &= \frac{r\sqrt{n-2}}{\sqrt{1-r^2}} \\
 &= \frac{0.48\sqrt{20-2}}{\sqrt{1-0.48^2}} \\
 &= \frac{2.03}{0.88} \\
 &= 2.31
 \end{aligned}$$

$$\begin{aligned}
 \text{tabel dk} &= n-2 \\
 &= 20 - 2 \\
 &= 18
 \end{aligned}$$

$$t_{tabel} = 2,11$$

Berarti :

t_{tabel} dengan $\alpha = 0,05$ dan $dk = 17$ diperoleh tabel sebesar 2.31 karena

$t_{hitung} = 2.31 > t_{tabel} = 2,11$ dengan demikian kita terima H_0 berarti koefisien

korelasi 22.80% adalah signifikan.

3. Koefisien Korelasi ry_2

$$\begin{aligned} r &= \frac{n(\sum X_2Y) - (\sum X_2)(\sum Y)}{\sqrt{[n(\sum X_2^2) - (\sum X_2)^2][n(\sum Y^2) - (\sum Y)^2]}} \\ &= \frac{20(50935.36) - (1000)(1000)}{\sqrt{[20(51900) - (1000)^2] \cdot [20(51900) - (1000)^2]}} \\ &= \frac{1018707.16 - 1000000}{\sqrt{[38000]}} \\ &= \frac{18707.16}{38000} \\ &= 0.49 \end{aligned}$$

4. Uji keberartian koefisien korelasi

$$\begin{aligned} t &= \frac{r\sqrt{n-2}}{\sqrt{1-r^2}} \\ &= \frac{0.49\sqrt{20-2}}{\sqrt{1-0.49^2}} \\ &= \frac{2.09}{0.87} \\ &= 2.40 \end{aligned}$$

$$\begin{aligned} \text{tabel } dk &= n-2 \\ &= 20 - 2 \\ &= 18 \\ t_{tabel} &= 2,11 \end{aligned}$$

Berarti :

t_{tabel} dengan $\alpha = 0,05$ dan $dk = 18$ diperoleh tabel sebesar 2,11 karena $t_{hitung} = 2.40 > t_{tabel} 2,11$ dengan demikian ditolak H_0 berarti koefisien korelasi 24.24% adalah signifikan

5. Mencari ry_{1-2} (koefisien korelasi ganda)

$$\begin{aligned} Jk (\text{Reg}) &= b_1 \sum X_1 Y + b_2 \sum X_2 Y \\ &= (0.35)(907.27) + 0.37 (935.36) \\ &= 319.28 + 349.99 \\ &= 669.27 \end{aligned}$$

$$\begin{aligned} R &= \frac{\sqrt{Jk (\text{Reg})}}{\sum Y^2} \\ &= \frac{\sqrt{669.27}}{1900} \\ &= \sqrt{0.35} \\ &= 0.59 \end{aligned}$$

6. Uji keberartian koefisien korelasi ganda

$$\begin{aligned} FH &= \frac{R^2 / K}{(1-R^2) / n - K - 1} \\ &= \frac{(0.59)^2 / 2}{(1-(0.59)^2) / 20 - 2 - 1} \\ &= \frac{0.18}{0.04} \\ &= 4.62 \end{aligned}$$

F_{tabel} dicari dengan cara melihat daftar distribusi F dengan cacah predictor = 2 sebagai pembilang dan $(n-k-1) = 17$ sebagai penyebut didapat $F_{hitung} = 4.62 > F_{tabel} 3,59$, maka koefisien korelasi ganda $r_{y_{1-2}}$ adalah 35.22% signifikan.