# LAMPIRAN 1

- **Data Pengamatan Kartu *Snellen***
- **Data Pengamatan Huruf Sambung**

- **Data Pengamatan Kartu *Snellen***

  Data Ukuran Huruf Pada Kartu *Snellen* di Kursi Samping Depan Kiri

| No | Nomor tulisan yang dapat dilihat dengan kartu *Snellen* |
|---|---|
| 1 | 8 |
| 2 | 7 |
| 3 | 8 |
| 4 | 8 |
| 5 | 7 |
| 6 | 8 |
| 7 | 8 |
| 8 | 7 |
| 9 | 8 |
| 10 | 8 |
| 11 | 8 |
| 12 | 8 |
| 13 | 8 |
| 14 | 8 |
| 15 | 8 |
| 16 | 7 |
| 17 | 8 |
| 18 | 8 |
| 19 | 8 |
| 20 | 7 |
| 21 | 8 |
| 22 | 8 |
| 23 | 8 |
| 24 | 8 |
| 25 | 7 |
| 26 | 8 |
| 27 | 8 |
| 28 | 7 |
| 29 | 7 |
| 30 | 8 |

Data Ukuran Huruf Pada Kartu *Snellen* di Kursi Samping Depan Kanan

| No | Nomor tulisan yang dapat dilihat dengan kartu *Snellen* |
|---|---|
| 1 | 7 |
| 2 | 8 |
| 3 | 6 |
| 4 | 8 |
| 5 | 6 |
| 6 | 8 |
| 7 | 8 |
| 8 | 8 |
| 9 | 8 |
| 10 | 7 |
| 11 | 7 |
| 12 | 8 |
| 13 | 8 |
| 14 | 8 |
| 15 | 8 |
| 16 | 8 |
| 17 | 8 |
| 18 | 6 |
| 19 | 8 |
| 20 | 8 |
| 21 | 7 |
| 22 | 7 |
| 23 | 8 |
| 24 | 8 |
| 25 | 6 |
| 26 | 7 |
| 27 | 7 |
| 28 | 6 |
| 29 | 6 |
| 30 | 8 |

Data Ukuran Huruf Pada Kartu *Snellen* di Kursi Tengah Belakang

| No | Nomor tulisan yang dapat dilihat dengan kartu *Snellen* |
|---|---|
| 1 | 5 |
| 2 | 5 |
| 3 | 5 |
| 4 | 5 |
| 5 | 6 |
| 6 | 5 |
| 7 | 5 |
| 8 | 6 |
| 9 | 6 |
| 10 | 5 |
| 11 | 6 |
| 12 | 6 |
| 13 | 5 |
| 14 | 7 |
| 15 | 7 |
| 16 | 5 |
| 17 | 5 |
| 18 | 6 |
| 19 | 5 |
| 20 | 5 |
| 21 | 5 |
| 22 | 6 |
| 23 | 7 |
| 24 | 6 |
| 25 | 5 |
| 26 | 5 |
| 27 | 6 |
| 28 | 7 |
| 29 | 5 |
| 30 | 6 |

- **Data Pengamatan Huruf Sambung**

  Data Ukuran Huruf Sambung di Kursi Samping Kiri

| No | Nomor tulisan yang dapat dilihat dengan warna biru | Nomor tulisan yang dapat dilihat dengan warna hitam | Nomor tulisan yang dapat dilihat dengan warna merah | Nomor tulisan yang dapat dilihat dengan warna hijau | Warna tulisan dari yang paling terlihat | Warna tulisan yang paling tidak jelas terlihat |
|---|---|---|---|---|---|---|
| 1 | 6 | 5 | 5 | 6 | Hitam | Merah |
| 2 | 6 | 6 | 6 | 6 | Hitam | Merah |
| 3 | 4 | 5 | 4 | 6 | Hitam | Biru |
| 4 | 4 | 5 | 6 | 6 | Hitam | Biru |
| 5 | 6 | 5 | 5 | 4 | Hitam | Hijau |
| 6 | 6 | 4 | 4 | 6 | Hitam | Merah |
| 7 | 6 | 6 | 6 | 6 | Merah | Hijau |
| 8 | 4 | 5 | 5 | 5 | Hitam | Biru |
| 9 | 5 | 5 | 5 | 5 | Hitam | Biru |
| 10 | 5 | 5 | 6 | 5 | Hitam | Biru |
| 11 | 6 | 6 | 5 | 6 | Hitam | Merah |
| 12 | 6 | 6 | 6 | 5 | Hitam | Hijau |
| 13 | 4 | 4 | 5 | 4 | Hitam | Hijau |
| 14 | 5 | 5 | 5 | 4 | Hitam | Hijau |
| 15 | 4 | 6 | 6 | 4 | Hitam | Biru |
| 16 | 5 | 6 | 6 | 6 | Hitam | Biru |
| 17 | 5 | 6 | 6 | 5 | Hitam | Biru |
| 18 | 5 | 6 | 6 | 5 | Hitam | Biru |
| 19 | 6 | 6 | 4 | 5 | Hitam | Merah |
| 20 | 5 | 6 | 6 | 6 | Hitam | Biru |
| 21 | 6 | 6 | 6 | 6 | Hitam | Merah |
| 22 | 6 | 6 | 6 | 5 | Hitam | Merah |
| 23 | 4 | 4 | 6 | 4 | Hitam | Merah |
| 24 | 6 | 5 | 4 | 6 | Hitam | Merah |
| 25 | 6 | 5 | 4 | 6 | Hitam | Merah |
| 26 | 4 | 4 | 5 | 5 | Hitam | Biru |
| 27 | 5 | 6 | 6 | 6 | Hitam | Biru |
| 28 | 5 | 5 | 5 | 6 | Hitam | Merah |
| 29 | 6 | 5 | 5 | 4 | Hitam | Hijau |
| 30 | 5 | 4 | 5 | 4 | Hitam | Hijau |

Data Ukuran Huruf Sambung di Kursi Samping Kanan

| No | Nomor tulisan yang dapat dilihat dengan warna biru | Nomor tulisan yang dapat dilihat dengan warna hitam | Nomor tulisan yang dapat dilihat dengan warna merah | Nomor tulisan yang dapat dilihat dengan warna hijau | Warna tulisan dari yang paling terlihat | Warna tulisan yang paling tidak jelas terlihat |
|---|---|---|---|---|---|---|
| 1 | 6 | 5 | 5 | 6 | Hitam | Merah |
| 2 | 6 | 5 | 6 | 4 | Hitam | Hijau |
| 3 | 4 | 6 | 5 | 5 | Hitam | Merah |
| 4 | 5 | 6 | 6 | 6 | Hitam | Biru |
| 5 | 5 | 5 | 5 | 4 | Hitam | Hijau |
| 6 | 5 | 4 | 4 | 4 | Hitam | Biru |
| 7 | 5 | 4 | 6 | 6 | Hitam | Biru |
| 8 | 4 | 4 | 4 | 6 | Hitam | Merah |
| 9 | 4 | 4 | 5 | 4 | Hitam | Merah |
| 10 | 6 | 6 | 6 | 4 | Hitam | Biru |
| 11 | 6 | 6 | 6 | 6 | Hitam | Biru |
| 12 | 6 | 6 | 6 | 5 | Biru | Hijau |
| 13 | 5 | 5 | 5 | 5 | Hitam | Biru |
| 14 | 6 | 4 | 6 | 4 | Hitam | Hijau |
| 15 | 6 | 6 | 6 | 6 | Hitam | Biru |
| 16 | 6 | 6 | 6 | 6 | Hitam | Biru |
| 17 | 5 | 4 | 4 | 5 | Hitam | Biru |
| 18 | 5 | 5 | 5 | 5 | Hitam | Biru |
| 19 | 5 | 5 | 4 | 5 | Hitam | Biru |
| 20 | 4 | 6 | 5 | 6 | Hitam | Merah |
| 21 | 6 | 6 | 6 | 6 | Hitam | Biru |
| 22 | 6 | 6 | 6 | 6 | Hitam | Merah |
| 23 | 6 | 6 | 6 | 6 | Hitam | Merah |
| 24 | 5 | 6 | 4 | 6 | Hitam | Biru |
| 25 | 6 | 6 | 6 | 4 | Hitam | Biru |
| 26 | 6 | 6 | 5 | 5 | Hitam | Merah |
| 27 | 5 | 5 | 5 | 5 | Hitam | Biru |
| 28 | 5 | 5 | 6 | 6 | Hitam | Biru |
| 29 | 4 | 5 | 4 | 5 | Hitam | Merah |
| 30 | 4 | 5 | 5 | 5 | Hitam | Merah |

Data Ukuran Huruf Sambung di Kursi Tengah Belakang

| No | Nomor tulisan yang dapat dilihat dengan warna biru | Nomor tulisan yang dapat dilihat dengan warna hitam | Nomor tulisan yang dapat dilihat dengan warna merah | Nomor tulisan yang dapat dilihat dengan warna hijau | Warna tulisan dari yang paling terlihat | Warna tulisan yang paling tidak jelas terlihat |
|---|---|---|---|---|---|---|
| 1 | 6 | 6 | 4 | 4 | Biru | Hijau |
| 2 | 5 | 4 | 4 | 4 | Hitam | Hijau |
| 3 | 5 | 4 | 4 | 5 | Hitam | Biru |
| 4 | 4 | 4 | 4 | 5 | Hitam | Biru |
| 5 | 6 | 4 | 5 | 5 | Hitam | Merah |
| 6 | 5 | 6 | 5 | 6 | Hitam | Merah |
| 7 | 6 | 6 | 6 | 5 | Hitam | Hijau |
| 8 | 4 | 5 | 6 | 4 | Hitam | Merah |
| 9 | 6 | 4 | 5 | 4 | Hitam | Hijau |
| 10 | 4 | 5 | 5 | 4 | Hitam | Hijau |
| 11 | 4 | 4 | 4 | 4 | Hitam | Hijau |
| 12 | 4 | 4 | 4 | 5 | Hitam | Biru |
| 13 | 6 | 6 | 5 | 6 | Hitam | Biru |
| 14 | 6 | 6 | 6 | 6 | Hitam | Biru |
| 15 | 5 | 5 | 5 | 5 | Hitam | Biru |
| 16 | 4 | 5 | 6 | 6 | Hitam | Merah |
| 17 | 4 | 4 | 4 | 5 | Hitam | Merah |
| 18 | 4 | 4 | 4 | 4 | Hitam | Biru |
| 19 | 5 | 5 | 4 | 4 | Hitam | Merah |
| 20 | 5 | 5 | 5 | 4 | Hitam | Hijau |
| 21 | 4 | 5 | 4 | 4 | Hitam | Biru |
| 22 | 5 | 4 | 6 | 4 | Hitam | Merah |
| 23 | 6 | 4 | 5 | 6 | Hitam | Merah |
| 24 | 4 | 4 | 5 | 5 | Hitam | Merah |
| 25 | 4 | 5 | 4 | 4 | Hitam | Merah |
| 26 | 6 | 5 | 4 | 4 | Hitam | Hijau |
| 27 | 5 | 6 | 6 | 6 | Hitam | Biru |
| 28 | 5 | 6 | 5 | 5 | Hitam | Merah |
| 29 | 4 | 6 | 4 | 6 | Hitam | Merah |
| 30 | 4 | 5 | 5 | 5 | Hitam | Merah |

# LAMPIRAN 2

- **Perhitungan Uji Normal**
- **Perhitungan Uji Seragam**
- **Perhitungan Uji Cukup**

- **Perhitungan Uji Normal**

  Uji Normal untuk Posisi Duduk di Kursi Samping Depan Kiri

  - Warna Tulisan Biru

    Diketahui : $\alpha = 1 - 0.95 = 0.05$

    $k = 3.3 \log n + 1$

    $= 3.3 \log 30 + 1$

    $= 5.875 \approx 6$ kelas

$$c = \frac{Max - Min}{k}$$

$$= \frac{6 - 4}{5.875}$$

$$= 0.340$$

$$\bar{x} = \frac{\sum Xi}{n}$$

$$= \frac{156}{30} = 5.200$$

$$\sigma = \sqrt{\frac{\sum (Xi - \bar{X})^2}{n-1}}$$

$$= \sqrt{\frac{(6-5.2)^2 + (6-5.2)^2 + .. + (5-5.2)^2}{30-1}} = 0.805$$

| Interval Kelas | Batas Kelas | Oi | Z1 | Z2 | P(Z1) | P(Z2) | P(Z2)-P(Z1) | Ei | Ei gab | Oi gab | (oi-ei)^2/ei |
|---|---|---|---|---|---|---|---|---|---|---|---|
| < 4 | < 3.995 | 0 | | -1.497 | 0.000 | 0.067 | 0.067 | 2.016 | 7.714 | 7 | 0.066 |
| 4-4.33 | 3.995-4.335 | 7 | -1.497 | -1.075 | 0.067 | 0.141 | 0.074 | 2.222 | | | |
| 4.34-4.67 | 4.335- 4.675 | 0 | -1.075 | -0.652 | 0.141 | 0.257 | 0.116 | 3.476 | | | |
| 4.68- 5.01 | 4.675 - 5.015 | 10 | -0.652 | -0.230 | 0.257 | 0.409 | 0.152 | 4.559 | 9.576 | 10 | 0.019 |
| 5.02- 5.35 | 5.015- 5.355 | 0 | -0.230 | 0.193 | 0.409 | 0.576 | 0.167 | 5.017 | | | |
| 5.36 - 5.69 | 5.355 - 5.695 | 0 | 0.193 | 0.615 | 0.576 | 0.731 | 0.154 | 4.630 | 12.710 | 13 | 0.007 |
| 5.7- 6.03 | 5.695-6.035 | 13 | 0.615 | 1.037 | 0.731 | 0.850 | 0.120 | 3.585 | | | |
| > 6.04 | > 6.035 | 0 | 1.037 | | 0.850 | 1.000 | 0.150 | 4.494 | | | |
| | | 30 | | | | | | | | | 0.092 |

$\chi^{2}_{(\alpha,v)}$ tabel = 5.991

$\chi^{2} < \chi^{2}_{(\alpha,v)} \rightarrow 0.092 < 5.991$, maka data mengikuti distribusi normal.

- Warna Tulisan Hitam

Diketahui : $\alpha = 1 - 0.95 = 0.05$

$k = 3.3 \log n + 1$

$= 3.3 \log 30 + 1$

$= 5.875 \approx 6$ kelas

$$c = \frac{Max - Min}{k}$$

$$= \frac{6 - 4}{5.875}$$

$$= 0.340$$

$$\bar{x} = \frac{\sum Xi}{n}$$

$$= \frac{158}{30} = 5.267$$

$$\sigma = \sqrt{\frac{\sum \left(Xi - \bar{X}\right)^2}{n-1}}$$

$$= \sqrt{\frac{(5-5.267)^2 + (6-5.267)^2 + .. + (4-5.267)^2}{30-1}} = 0.740$$

| Interval Kelas | Batas Kelas | Oi | Z1 | Z2 | P(Z1) | P(Z2) | P(Z2)-P(Z1) | Ei | Ei gab | Oi gab | (oi-ei)^2/ei |
|---|---|---|---|---|---|---|---|---|---|---|---|
| < 4 | < 3.995 | 0 | | -1.719 | 0.000 | 0.043 | 0.043 | 1.284 | 6.356 | 5 | 0.289 |
| 4-4.33 | 3.995-4.335 | 5 | -1.719 | -1.259 | 0.043 | 0.104 | 0.061 | 1.834 | | | |
| 4.34-4.67 | 4.335- 4.675 | 0 | -1.259 | -0.800 | 0.104 | 0.212 | 0.108 | 3.238 | | | |
| 4.68- 5.01 | 4.675 - 5.015 | 12 | -0.800 | -0.341 | 0.212 | 0.367 | 0.155 | 4.646 | 10.064 | 12 | 0.372 |
| 5.02- 5.35 | 5.015- 5.355 | 0 | -0.341 | 0.119 | 0.367 | 0.547 | 0.181 | 5.418 | | | |
| 5.36 - 5.69 | 5.355 - 5.695 | 0 | 0.119 | 0.578 | 0.547 | 0.718 | 0.171 | 5.135 | 13.580 | 13 | 0.025 |
| 5.7- 6.03 | 5.695-6.035 | 13 | 0.578 | 1.038 | 0.718 | 0.850 | 0.132 | 3.955 | | | |
| > 6.04 | > 6.035 | 0 | 1.038 | | 0.850 | 1.000 | 0.150 | 4.490 | | | |
| | | 30 | | | | | | | | | 0.686 |

$\chi^{2}_{(\alpha,v)}$ tabel = 5.991

$\chi^{2} < \chi^{2}_{(\alpha,v)} \rightarrow 0.686 < 5.991$, maka data mengikuti distribusi normal.

- Warna Tulisan Merah

Diketahui : $\alpha = 1 - 0.95 = 0.05$

$k = 3.3 \log n + 1$

$= 3.3 \log 30 + 1$

$= 5.875 \approx 6$ kelas

$$c = \frac{Max - Min}{k}$$

$$= \frac{6 - 4}{5.875}$$

$= 0.340$

$$\bar{x} = \frac{\sum Xi}{n}$$

$$= \frac{159}{30} = 5.3$$

$$\sigma = \sqrt{\frac{\sum (Xi - \bar{X})^2}{n-1}}$$

$$= \sqrt{\frac{(5-5.3)^2 + (6-5.3)^2 + .. + (5-5.3)^2}{30-1}} = 0.750$$

| Interval Kelas | Batas Kelas | Oi | Z1 | Z2 | P(Z1) | P(Z2) | P(Z2)-P(Z1) | Ei | Ei gab | Oi gab | (oi-ei)^2/ei |
|---|---|---|---|---|---|---|---|---|---|---|---|
| < 4 | < 3.995 | 0 | | -1.740 | 0.000 | 0.041 | 0.041 | 1.228 | 6.070 | 5 | 0.189 |
| 4-4.33 | 3.995-4.335 | 5 | -1.740 | -1.287 | 0.041 | 0.099 | 0.058 | 1.745 | | | |
| 4.34-4.67 | 4.335- 4.675 | 0 | -1.287 | -0.833 | 0.099 | 0.202 | 0.103 | 3.097 | | | |
| 4.68- 5.01 | 4.675 - 5.015 | 11 | -0.833 | -0.380 | 0.202 | 0.352 | 0.150 | 4.489 | 9.807 | 11 | 0.145 |
| 5.02- 5.35 | 5.015- 5.355 | 0 | -0.380 | 0.073 | 0.352 | 0.529 | 0.177 | 5.318 | | | |
| 5.36 - 5.69 | 5.355 - 5.695 | 0 | 0.073 | 0.527 | 0.529 | 0.701 | 0.172 | 5.147 | 14.123 | 14 | 0.001 |
| 5.7- 6.03 | 5.695-6.035 | 14 | 0.527 | 0.980 | 0.701 | 0.836 | 0.136 | 4.070 | | | |
| > 6.04 | > 6.035 | 0 | 0.980 | | 0.836 | 1.000 | 0.164 | 4.906 | | | |
| | | 30 | | | | | | | | | 0.335 |

$\chi^{2}_{(\alpha,v)}$ tabel = 5.991

$\chi^{2} < \chi^{2}_{(\alpha,v)} \rightarrow 0.335 < 5.991$, maka data mengikuti distribusi normal.

- Warna Tulisan Hijau

Diketahui : $\alpha = 1 - 0.95 = 0.05$

$k = 3.3 \log n + 1$

$= 3.3 \log 30 + 1$

$= 5.875 \approx 6$ kelas

$$c = \frac{Max - Min}{k}$$

$$= \frac{6 - 4}{5.875}$$

$$= 0.340$$

$$\bar{x} = \frac{\sum Xi}{n}$$

$$= \frac{157}{30} = 5.233$$

$$\sigma = \sqrt{\frac{\sum \left(Xi - \bar{X}\right)^2}{n-1}}$$

$$= \sqrt{\frac{(6-5.233)^2 + (6-5.233)^2 + .. + (4-5.233)^2}{30-1}} = 0.817$$

| Interval Kelas | Batas Kelas | Oi | Z1 | Z2 | P(Z1) | P(Z2) | P(Z2)-P(Z1) | Ei | Ei gab | Oi gab | (oi-ei)^2/ei |
|---|---|---|---|---|---|---|---|---|---|---|---|
| < 4 | < 3.995 | 0 | | -1.515 | 0.000 | 0.065 | 0.065 | 1.945 | 7.419 | 7 | 0.024 |
| 4-4.33 | 3.995-4.335 | 7 | -1.515 | -1.099 | 0.065 | 0.136 | 0.071 | 2.130 | | | |
| 4.34-4.67 | 4.335- 4.675 | 0 | -1.099 | -0.683 | 0.136 | 0.247 | 0.111 | 3.344 | | | |
| 4.68- 5.01 | 4.675 - 5.015 | 9 | -0.683 | -0.267 | 0.247 | 0.395 | 0.147 | 4.425 | 9.361 | 9 | 0.014 |
| 5.02- 5.35 | 5.015- 5.355 | 0 | -0.267 | 0.149 | 0.395 | 0.559 | 0.165 | 4.937 | | | |
| 5.36 - 5.69 | 5.355 - 5.695 | 0 | 0.149 | 0.565 | 0.559 | 0.714 | 0.155 | 4.643 | 13.219 | 14 | 0.046 |
| 5.7- 6.03 | 5.695-6.035 | 14 | 0.565 | 0.982 | 0.714 | 0.837 | 0.123 | 3.682 | | | |
| > 6.04 | > 6.035 | 0 | 0.982 | | 0.837 | 1.000 | 0.163 | 4.894 | | | |
| | | 30 | | | | | | | | | 0.084 |

$\chi^{2}_{(\alpha,v)}$ tabel = 5.991

$\chi^{2} < \chi^{2}_{(\alpha,v)} \rightarrow 0.084 < 5.991$, maka data mengikuti distribusi normal.

Uji Normal untuk Posisi Duduk di Kursi Samping Depan Kanan

- Warna Tulisan Biru

Diketahui : $\alpha = 1 - 0.95 = 0.05$

$k = 3.3 \log n + 1$

$= 3.3 \log 30 + 1$

$= 5.875 \approx 6$ kelas

$$c = \frac{Max - Min}{k}$$

$$= \frac{6 - 4}{5.875}$$

$= 0.340$

$$\bar{x} = \frac{\sum Xi}{n}$$

$$= \frac{157}{30} = 5.233$$

$$\sigma = \sqrt{\frac{\sum \left(Xi - \bar{X}\right)^2}{n-1}}$$

$$= \sqrt{\frac{(6-5.233)^2 + (6-5.233)^2 + .. + (4-5.233)^2}{30-1}} = 0.774$$

| Interval Kelas | Batas Kelas | Oi | Z1 | Z2 | P(Z1) | P(Z2) | P(Z2)-P(Z1) | Ei | Ei gab | Oi gab | (oi-ei)^2/ei |
|---|---|---|---|---|---|---|---|---|---|---|---|
| < 4 | < 3.995 | 0 | | -1.599 | 0.000 | 0.055 | 0.055 | 1.646 | 7.064 | 6 | 0.160 |
| 4-4.33 | 3.995-4.335 | 6 | -1.599 | -1.160 | 0.055 | 0.123 | 0.068 | 2.044 | | | |
| 4.34-4.67 | 4.335- 4.675 | 0 | -1.160 | -0.721 | 0.123 | 0.235 | 0.112 | 3.375 | | | |
| 4.68- 5.01 | 4.675 - 5.015 | 11 | -0.721 | -0.282 | 0.235 | 0.389 | 0.154 | 4.609 | 9.814 | 11 | 0.143 |
| 5.02- 5.35 | 5.015- 5.355 | 0 | -0.282 | 0.158 | 0.389 | 0.563 | 0.174 | 5.206 | | | |
| 5.36 - 5.69 | 5.355 - 5.695 | 0 | 0.158 | 0.597 | 0.563 | 0.725 | 0.162 | 4.863 | 13.121 | 13 | 0.001 |
| 5.7- 6.03 | 5.695-6.035 | 13 | 0.597 | 1.036 | 0.725 | 0.850 | 0.125 | 3.757 | | | |
| > 6.04 | > 6.035 | 0 | 1.036 | | 0.850 | 1.000 | 0.150 | 4.502 | | | |
| | | 30 | | | | | | | | | 0.305 |

$\chi^{2}_{(\alpha,v)}$ tabel $= 5.991$

$\chi^{2} < \chi^{2}_{(\alpha,v)} \rightarrow 0.305 < 5.991$, maka data mengikuti distribusi normal.

- Warna Tulisan Hitam

Diketahui : $\alpha = 1 - 0.95 = 0.05$

$k = 3.3 \log n + 1$

$= 3.3 \log 30 + 1$

$= 5.875 \approx 6$ kelas

$$c = \frac{Max - Min}{k}$$

$$= \frac{6 - 4}{5.875}$$

$$= 0.340$$

$$\bar{x} = \frac{\sum Xi}{n}$$

$$= \frac{158}{30} = 5.267$$

$$\sigma = \sqrt{\frac{\sum \left(Xi - \bar{X}\right)^2}{n-1}}$$

$$= \sqrt{\frac{(5-5.267)^2 + (5-5.267)^2 + .. + (5-5.267)^2}{30-1}} = 0.785$$

| Interval Kelas | Batas Kelas | Oi | Z1 | Z2 | P(Z1) | P(Z2) | P(Z2)-P(Z1) | Ei | Ei gab | Oi gab | (oi-ei)^2/ei |
|---|---|---|---|---|---|---|---|---|---|---|---|
| < 4 | < 3.995 | 0 | | -1.620 | 0.000 | 0.053 | 0.053 | 1.577 | 6.761 | 6 | 0.086 |
| 4-4.33 | 3.995-4.335 | 6 | -1.620 | -1.187 | 0.053 | 0.118 | 0.065 | 1.950 | | | |
| 4.34-4.67 | 4.335- 4.675 | 0 | -1.187 | -0.754 | 0.118 | 0.225 | 0.108 | 3.235 | | | |
| 4.68- 5.01 | 4.675 - 5.015 | 10 | -0.754 | -0.321 | 0.225 | 0.374 | 0.149 | 4.461 | 9.577 | 10 | 0.019 |
| 5.02- 5.35 | 5.015- 5.355 | 0 | -0.321 | 0.112 | 0.374 | 0.545 | 0.171 | 5.116 | | | |
| 5.36 - 5.69 | 5.355 - 5.695 | 0 | 0.112 | 0.545 | 0.545 | 0.707 | 0.163 | 4.877 | 13.661 | 14 | 0.008 |
| 5.7- 6.03 | 5.695-6.035 | 14 | 0.545 | 0.978 | 0.707 | 0.836 | 0.129 | 3.865 | | | |
| > 6.04 | > 6.035 | 0 | 0.978 | | 0.836 | 1.000 | 0.164 | 4.919 | | | |
| | | 30 | | | | | | | | | 0.113 |

$\chi^2_{(\alpha,v)}$ tabel $= 5.991$

$\chi^2 < \chi^2_{(\alpha,v)} \rightarrow 0.113 < 5.991$, maka data mengikuti distribusi normal.

- Warna Tulisan Merah

Diketahui : $\alpha = 1 - 0.95 = 0.05$

$k = 3.3 \log n + 1$

$= 3.3 \log 30 + 1$

$= 5.875 \approx 6$ kelas

$$c = \frac{Max - Min}{k}$$

$$= \frac{6 - 4}{5.875}$$

$$= 0.340$$

$$\bar{x} = \frac{\sum Xi}{n}$$

$$= \frac{158}{30} = 5.267$$

$$\sigma = \sqrt{\frac{\sum (Xi - \bar{X})^2}{n-1}}$$

$$= \sqrt{\frac{(5 - 5.267)^2 + (6 - 5.267)^2 + .. + (5 - 5.267)^2}{30 - 1}}$$

$$= 0.785$$

| Interval Kelas | Batas Kelas | Oi | Z1 | Z2 | P(Z1) | P(Z2) | P(Z2)-P(Z1) | Ei | Ei gab | Oi gab | (oi-ei)^2/ei |
|---|---|---|---|---|---|---|---|---|---|---|---|
| < 4 | < 3.995 | 0 | | -1.620 | 0.000 | 0.053 | 0.053 | 1.577 | 6.761 | 6 | 0.086 |
| 4-4.33 | 3.995-4.335 | 6 | -1.620 | -1.187 | 0.053 | 0.118 | 0.065 | 1.950 | | | |
| 4.34-4.67 | 4.335- 4.675 | 0 | -1.187 | -0.754 | 0.118 | 0.225 | 0.108 | 3.235 | | | |
| 4.68- 5.01 | 4.675 - 5.015 | 10 | -0.754 | -0.321 | 0.225 | 0.374 | 0.149 | 4.461 | 9.577 | 10 | 0.019 |
| 5.02- 5.35 | 5.015- 5.355 | 0 | -0.321 | 0.112 | 0.374 | 0.545 | 0.171 | 5.116 | | | |
| 5.36 - 5.69 | 5.355 - 5.695 | 0 | 0.112 | 0.545 | 0.545 | 0.707 | 0.163 | 4.877 | 13.661 | 14 | 0.008 |
| 5.7- 6.03 | 5.695-6.035 | 14 | 0.545 | 0.978 | 0.707 | 0.836 | 0.129 | 3.865 | | | |
| > 6.04 | > 6.035 | 0 | 0.978 | | 0.836 | 1.000 | 0.164 | 4.919 | | | |
| | | 30 | | | | | | | | | 0.113 |

$\chi^{2}_{(\alpha,v)}$ tabel $= 5.991$

$\chi^{2} < \chi^{2}_{(\alpha,v)} \rightarrow 0.113 < 5.991$, maka data mengikuti distribusi normal.

- Warna Tulisan Hijau

Diketahui : $\alpha = 1 - 0.95 = 0.05$

$k = 3.3 \log n + 1$

$= 3.3 \log 30 + 1$

$= 5.875 \approx 6$ kelas

$$c = \frac{Max - Min}{k}$$

$$= \frac{6 - 4}{5.875}$$

$$= 0.340$$

$$\bar{x} = \frac{\sum Xi}{n}$$

$$= \frac{156}{30} = 5.2$$

$$\sigma = \sqrt{\frac{\sum \left(Xi - \bar{X}\right)^2}{n-1}}$$

$$= \sqrt{\frac{(6-5.2)^2 + (4-5.2)^2 + .. + (5-5.2)^2}{30-1}} = 0.805$$

| Interval Kelas | Batas Kelas | Oi | Z1 | Z2 | P(Z1) | P(Z2) | P(Z2)-P(Z1) | Ei | Ei gab | Oi gab | (oi-ei)^2/ei |
|---|---|---|---|---|---|---|---|---|---|---|---|
| < 4 | < 3.995 | 0 | | -1.497 | 0.000 | 0.067 | 0.067 | 2.016 | 7.714 | 7 | 0.066 |
| 4-4.33 | 3.995-4.335 | 7 | -1.497 | -1.075 | 0.067 | 0.141 | 0.074 | 2.222 | | | |
| 4.34-4.67 | 4.335- 4.675 | 0 | -1.075 | -0.652 | 0.141 | 0.257 | 0.116 | 3.476 | | | |
| 4.68- 5.01 | 4.675 - 5.015 | 10 | -0.652 | -0.230 | 0.257 | 0.409 | 0.152 | 4.559 | 9.576 | 10 | 0.019 |
| 5.02- 5.35 | 5.015- 5.355 | 0 | -0.230 | 0.193 | 0.409 | 0.576 | 0.167 | 5.017 | | | |
| 5.36 - 5.69 | 5.355 - 5.695 | 0 | 0.193 | 0.615 | 0.576 | 0.731 | 0.154 | 4.630 | 8.216 | 13 | 2.786 |
| 5.7- 6.03 | 5.695-6.035 | 13 | 0.615 | 1.037 | 0.731 | 0.850 | 0.120 | 3.585 | | | |
| > 6.04 | > 6.035 | 0 | 1.037 | | 0.850 | 1.000 | 0.150 | 4.494 | | | |
| | | 30 | | | | | | | | | 2.871 |

$\chi^2_{(\alpha,v)}$ tabel = 5.991

$\chi^2 < \chi^2_{(\alpha,v)} \rightarrow 2.871 < 5.991$, maka data mengikuti distribusi normal.

Uji Normal untuk Posisi Duduk di Kursi Tengah Belakang

- Warna Tulisan Biru

Diketahui : $\alpha = 1 - 0.95 = 0.05$

$k = 3.3 \log n + 1$

$= 3.3 \log 30 + 1$

$= 5.875 \approx 6$ kelas

$$c = \frac{Max - Min}{k}$$

$$= \frac{6 - 4}{5.875}$$

$= 0.34$

$$\bar{x} = \frac{\sum Xi}{n}$$

$$= \frac{145}{30} = 4.833$$

$$\sigma = \sqrt{\frac{\sum\left(Xi - \overline{X}\right)^2}{n-1}}$$

$$= \sqrt{\frac{(6-4.833)^2 + (5-4.833)^2 + .. + (4-4.833)^2}{30-1}} = 0.834$$

| Interval Kelas | Batas Kelas | Oi | Z1 | Z2 | P(Z1) | P(Z2) | P(Z2)-P(Z1) | Ei | Ei gab | Oi gab | (oi-ei)^2/ei |
|---|---|---|---|---|---|---|---|---|---|---|---|
| < 4 | < 3.995 | 0 | | -1.005 | 0.000 | 0.157 | 0.157 | 4.725 | 8.256 | 13 | 2.725 |
| 4-4.33 | 3.995-4.335 | 13 | -1.005 | -0.597 | 0.157 | 0.275 | 0.118 | 3.531 | | | |
| 4.34-4.67 | 4.335- 4.675 | 0 | -0.597 | -0.189 | 0.275 | 0.425 | 0.150 | 4.490 | 9.335 | 9 | 0.012 |
| 4.68- 5.01 | 4.675 - 5.015 | 9 | -0.189 | 0.218 | 0.425 | 0.586 | 0.162 | 4.845 | | | |
| 5.02- 5.35 | 5.015- 5.355 | 0 | 0.218 | 0.626 | 0.586 | 0.734 | 0.148 | 4.438 | 12.409 | 8 | 1.566 |
| 5.36 - 5.69 | 5.355 - 5.695 | 0 | 0.626 | 1.034 | 0.734 | 0.849 | 0.115 | 3.451 | | | |
| 5.7- 6.03 | 5.695-6.035 | 8 | 1.034 | 1.441 | 0.849 | 0.925 | 0.076 | 2.277 | | | |
| > 6.04 | > 6.035 | 0 | 1.441 | | 0.925 | 1.000 | 0.075 | 2.243 | | | |
| | | 30 | | | | | | | | | 4.304 |

$\chi^2_{(\alpha,v)}$ tabel = 5.991

$\chi^2 < \chi^2_{(\alpha,v)} \rightarrow 4.304 < 5.991$, maka data mengikuti distribusi normal.

- Warna Tulisan Hitam

Diketahui : $\alpha = 1 - 0.95 = 0.05$

$k = 3.3 \log n + 1$

$= 3.3 \log 30 + 1$

$= 5.875 \approx 6$ kelas

$$c = \frac{Max - Min}{k}$$

$$= \frac{6 - 4}{5.875}$$

$= 0.34$

$$\overline{x} = \frac{\sum Xi}{n}$$

$$= \frac{146}{30} = 4.867$$

$$\sigma = \sqrt{\frac{\sum\left(Xi - \overline{X}\right)^2}{n-1}}$$

$$= \sqrt{\frac{(6-4.867)^2 + (4-4.867)^2 + .. + (5-4.867)^2}{30-1}} = 0.819$$

| Interval Kelas | Batas Kelas | Oi | Z1 | Z2 | P(Z1) | P(Z2) | P(Z2)-P(Z1) | Ei | Ei gab | Oi gab | (oi-ei)^2/ei |
|---|---|---|---|---|---|---|---|---|---|---|---|
| < 4 | < 3.995 | 0 | | -1.065 | 0.000 | 0.144 | 0.144 | 4.305 | 7.740 | 12 | 2.345 |
| 4-4.33 | 3.995-4.335 | 12 | -1.065 | -0.650 | 0.144 | 0.258 | 0.114 | 3.434 | | | |
| 4.34-4.67 | 4.335- 4.675 | 0 | -0.650 | -0.234 | 0.258 | 0.407 | 0.149 | 4.480 | 9.412 | 10 | 0.037 |
| 4.68- 5.01 | 4.675 - 5.015 | 10 | -0.234 | 0.181 | 0.407 | 0.572 | 0.164 | 4.931 | | | |
| 5.02- 5.35 | 5.015- 5.355 | 0 | 0.181 | 0.596 | 0.572 | 0.724 | 0.153 | 4.580 | 12.849 | 8 | 1.830 |
| 5.36 - 5.69 | 5.355 - 5.695 | 0 | 0.596 | 1.011 | 0.724 | 0.844 | 0.120 | 3.589 | | | |
| 5.7- 6.03 | 5.695-6.035 | 8 | 1.011 | 1.426 | 0.844 | 0.923 | 0.079 | 2.373 | | | |
| > 6.04 | > 6.035 | 0 | 1.426 | | 0.923 | 1.000 | 0.077 | 2.307 | | | |
| | | 30 | | | | | | | | | 4.212 |

$\chi^2_{(\alpha,v)}$ tabel = 5.991

$\chi^2 < \chi^2_{(\alpha,v)} \rightarrow 4.212 < 5.991$, maka data mengikuti distribusi normal.

- Warna Tulisan Merah

Diketahui : $\alpha = 1 - 0.95 = 0.05$

$k = 3.3 \log n + 1$

$= 3.3 \log 30 + 1$

$= 5.875 \approx 6$ kelas

$$c = \frac{Max - Min}{k}$$

$$= \frac{6 - 4}{5.875}$$

$= 0.34$

$$\overline{x} = \frac{\sum Xi}{n}$$

$$= \frac{143}{30} = 4.767$$

$$\sigma = \sqrt{\frac{\sum\left(Xi - \overline{X}\right)^2}{n-1}}$$

$$= \sqrt{\frac{(4-4.767)^2 + (4-4.767)^2 + .. + (5-4.767)^2}{30-1}} = 0.774$$

| Interval Kelas | Batas Kelas | Oi | Z1 | Z2 | P(Z1) | P(Z2) | P(Z2)-P(Z1) | Ei | Ei gab | Oi gab | (oi-ei)^2/ei |
|---|---|---|---|---|---|---|---|---|---|---|---|
| < 4 | < 3.995 | 0 | | -0.997 | 0.000 | 0.159 | 0.159 | 4.778 | 8.651 | 13 | 2.186 |
| 4-4.33 | 3.995-4.335 | 13 | -0.997 | -0.558 | 0.159 | 0.288 | 0.129 | 3.873 | | | |
| 4.34-4.67 | 4.335- 4.675 | 0 | -0.558 | -0.119 | 0.288 | 0.453 | 0.164 | 4.930 | 10.119 | 11 | 0.077 |
| 4.68- 5.01 | 4.675 - 5.015 | 11 | -0.119 | 0.320 | 0.453 | 0.626 | 0.173 | 5.189 | | | |
| 5.02- 5.35 | 5.015- 5.355 | 0 | 0.320 | 0.760 | 0.626 | 0.776 | 0.151 | 4.518 | 11.230 | 6 | 2.436 |
| 5.36 - 5.69 | 5.355 - 5.695 | 0 | 0.760 | 1.199 | 0.776 | 0.885 | 0.108 | 3.253 | | | |
| 5.7- 6.03 | 5.695-6.035 | 6 | 1.199 | 1.638 | 0.885 | 0.949 | 0.065 | 1.938 | | | |
| > 6.04 | > 6.035 | 0 | 1.638 | | 0.949 | 1.000 | 0.051 | 1.521 | | | |
| | | 30 | | | | | | | | | 4.698 |

$\chi^2_{(\alpha,v)}$ tabel = 5.991

$\chi^2 < \chi^2_{(\alpha,v)} \rightarrow 4.898 < 5.991$, maka data mengikuti distribusi normal.

- Warna Tulisan Hijau

Diketahui : $\alpha = 1 - 0.95 = 0.05$

$k = 3.3 \log n + 1$

$= 3.3 \log 30 + 1$

$= 5.875 \approx 6$ kelas

$$c = \frac{Max - Min}{k}$$

$$= \frac{6 - 4}{5.875}$$

$= 0.34$

$$\overline{x} = \frac{\sum Xi}{n}$$

$$= \frac{144}{30} = 4.8$$

$$\sigma = \sqrt{\frac{\sum\left(Xi - \overline{X}\right)^2}{n-1}}$$

$$= \sqrt{\frac{(5-4.8)^2 + (4-4.8)^2 + .. + (5-4.8)^2}{30-1}} = 0.805$$

| Interval Kelas | Batas Kelas | Oi | Z1 | Z2 | P(Z1) | P(Z2) | P(Z2)-P(Z1) | Ei | Ei gab | Oi gab | (oi-ei)^2/ei |
|---|---|---|---|---|---|---|---|---|---|---|---|
| < 4 | < 3.995 | 0 | | -1.000 | 0.000 | 0.159 | 0.159 | 4.760 | 8.453 | 13 | 2.446 |
| 4-4.33 | 3.995-4.335 | 13 | -1.000 | -0.578 | 0.159 | 0.282 | 0.123 | 3.693 | | | |
| 4.34-4.67 | 4.335- 4.675 | 0 | -0.578 | -0.155 | 0.282 | 0.438 | 0.157 | 4.696 | 9.706 | 10 | 0.009 |
| 4.68- 5.01 | 4.675 - 5.015 | 10 | -0.155 | 0.267 | 0.438 | 0.605 | 0.167 | 5.010 | | | |
| 5.02- 5.35 | 5.015- 5.355 | 0 | 0.267 | 0.689 | 0.605 | 0.755 | 0.149 | 4.483 | 11.841 | 7 | 1.979 |
| 5.36 - 5.69 | 5.355 - 5.695 | 0 | 0.689 | 1.112 | 0.755 | 0.867 | 0.112 | 3.365 | | | |
| 5.7- 6.03 | 5.695-6.035 | 7 | 1.112 | 1.534 | 0.867 | 0.938 | 0.071 | 2.119 | | | |
| > 6.04 | > 6.035 | 0 | 1.534 | | 0.938 | 1.000 | 0.062 | 1.875 | | | |
| | | 30 | | | | | | | | | 4.435 |

$\chi^2_{(\alpha,v)}$ tabel = 5.991

$\chi^2 < \chi^2_{(\alpha,v)} \rightarrow 4.435 < 5.991$, maka data mengikuti distribusi normal.

- **Perhitungan Uji Seragam**

  <u>Uji Seragam untuk Posisi Duduk di Kursi Samping Depan Kiri</u>

  - Warna Tulisan Biru

| Subgrup ke- | Waktu ke- | | | | | | Ukuran Huruf Rata-rata |
|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | |
| 1 | 6 | 6 | 4 | 4 | 6 | 6 | 5.333 |
| 2 | 6 | 4 | 5 | 5 | 6 | 6 | 5.333 |
| 3 | 4 | 5 | 4 | 5 | 5 | 5 | 4.667 |
| 4 | 6 | 5 | 6 | 6 | 4 | 6 | 5.500 |
| 5 | 6 | 4 | 5 | 5 | 6 | 5 | 5.167 |
| | | | | | | $\overline{\overline{x}}$ | 5.200 |

$$\overline{\overline{x}} = \frac{\sum Xi}{k}$$

$$= \frac{26}{5}$$

$$= 5.200$$

$$\sigma = \sqrt{\frac{\sum(Xi - \bar{X})^2}{n-1}}$$

$$= \sqrt{\frac{(6-5.200)^2 + (6-5.200)^2 + .. + (5-5.200)^2}{30-1}}$$

$$= 0.805$$

$$\sigma_{\bar{x}} = \frac{\sigma}{\sqrt{n}} = \frac{0.805}{\sqrt{6}} = 0.329$$

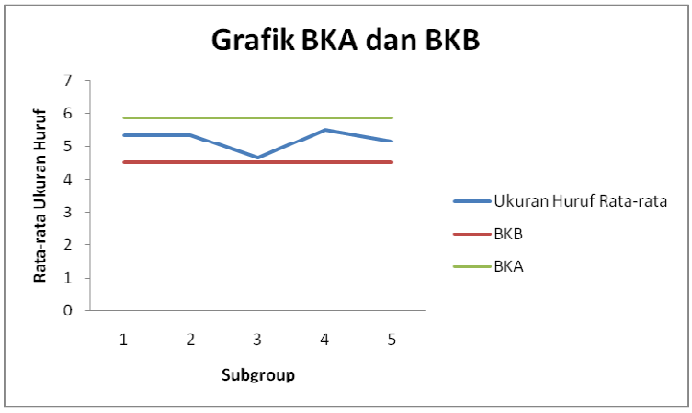
$$BKB = \bar{x} - c(\sigma_{\bar{x}})$$

$$= 5.200 - 2(0.329) = 4.543$$

$$BKA = \bar{x} + c(\sigma_{\bar{x}})$$

$$= 5.200 + 2(0.329) = 5.857$$

Grafik BKA dan BKB Warna Tulisan Biru Kursi Samping Depan Kiri



- Warna Tulisan Hitam

| Subgrup ke- | Waktu ke- | | | | | | Ukuran Huruf Rata-rata |
|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | |
| 1 | 5 | 6 | 5 | 5 | 5 | 4 | 5.000 |
| 2 | 6 | 5 | 5 | 5 | 6 | 6 | 5.500 |
| 3 | 4 | 5 | 6 | 6 | 6 | 6 | 5.500 |
| 4 | 6 | 6 | 6 | 6 | 4 | 5 | 5.500 |
| 5 | 5 | 4 | 6 | 5 | 5 | 4 | 4.833 |
| | | | | | | $\bar{\bar{x}}$ | 5.267 |

$$\bar{x} = \frac{\sum Xi}{k}$$

$$= \frac{26.333}{5}$$

$$= 5.267$$

$$\sigma = \sqrt{\frac{\sum \left(Xi - \bar{X}\right)^2}{n-1}}$$

$$= \sqrt{\frac{(5-5.267)^2 + (6-5.267)^2 + .. + (4-5.267)^2}{30-1}}$$

$$= 0.740$$

$$\sigma_{\bar{x}} = \frac{\sigma}{\sqrt{n}} = \frac{0.740}{\sqrt{6}} = 0.302$$

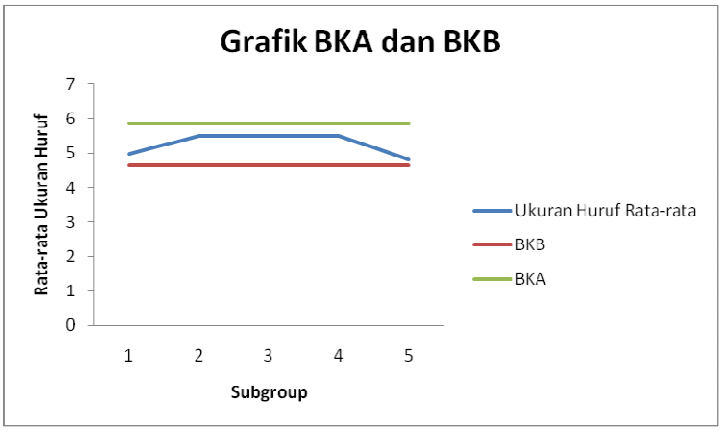
$$BKB = \bar{\bar{x}} - c\left(\sigma_{\bar{x}}\right)$$

$$= 5.267 - 2(0.302) = 4.663$$

$$BKA = \bar{\bar{x}} + c\left(\sigma_{\bar{x}}\right)$$

$$= 5.267 + 2(0.302) = 5.871$$

Grafik BKA dan BKB Warna Tulisan Hitam Kursi Samping Depan Kiri




o Warna Tulisan Merah

| Subgrup ke- | Ukuran Huruf ke- | | | | | | Ukuran Huruf Rata-rata |
|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | |
| 1 | 5 | 6 | 4 | 6 | 5 | 4 | 5.000 |
| 2 | 6 | 5 | 5 | 6 | 5 | 6 | 5.500 |
| 3 | 5 | 5 | 6 | 6 | 6 | 6 | 5.667 |
| 4 | 4 | 6 | 6 | 6 | 6 | 4 | 5.333 |
| 5 | 4 | 5 | 6 | 5 | 5 | 5 | 5.000 |
| | | | | | | $\bar{\bar{x}}$ | 5.300 |

$$\bar{\bar{x}} = \frac{\sum Xi}{k}$$

$$= \frac{26.5}{5}$$

$$= 5.300$$

$$\sigma = \sqrt{\frac{\sum (Xi - \bar{\bar{x}})^2}{n-1}}$$

$$= \sqrt{\frac{(5-5.300)^2 + (6-5.300)^2 + .. + (5-5.300)^2}{30-1}}$$

$$= 0.750$$

$$\sigma_{\bar{x}} = \frac{\sigma}{\sqrt{n}} = \frac{0.750}{\sqrt{6}} = 0.306$$

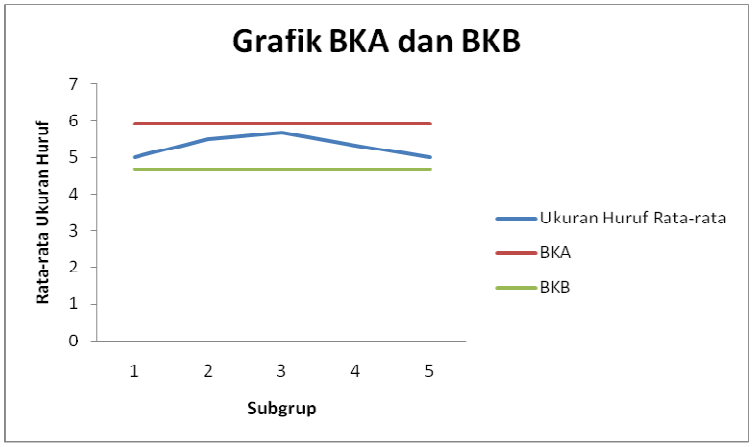
$$BKB = \bar{\bar{x}} - c(\sigma_{\bar{x}})$$

$$= 5.300 - 2(0.306) = 4.688$$

$$BKA = \bar{\bar{x}} + c(\sigma_{\bar{x}})$$

$$= 5.300 + 2(0.306) = 5.912$$

Grafik BKA dan BKB Warna Tulisan Merah Kursi Samping Depan Kiri




- Warna Tulisan Hijau

| Subgrup ke- | Ukuran Huruf ke- | | | | | | Ukuran Huruf Rata-rata |
|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | |
| 1 | 6 | 6 | 6 | 6 | 4 | 6 | 5.667 |
| 2 | 6 | 5 | 5 | 5 | 6 | 5 | 5.333 |
| 3 | 4 | 4 | 4 | 6 | 5 | 5 | 4.667 |
| 4 | 5 | 6 | 6 | 5 | 4 | 6 | 5.333 |
| 5 | 6 | 5 | 6 | 6 | 4 | 4 | 5.167 |
| | | | | | | $\bar{\bar{x}}$ | 5.233 |

$$\bar{x} = \frac{\sum Xi}{k}$$

$$= \frac{26.167}{5}$$

$$= 5.233$$

$$\sigma = \sqrt{\frac{\sum (Xi - \bar{X})^2}{n-1}}$$

$$= \sqrt{\frac{(6-5.233)^2 + (6-5.233)^2 + .. + (4-5.233)^2}{30-1}}$$

$$= 0.817$$

$$\sigma_{\bar{x}} = \frac{\sigma}{\sqrt{n}} = \frac{0.817}{\sqrt{6}} = 0.334$$

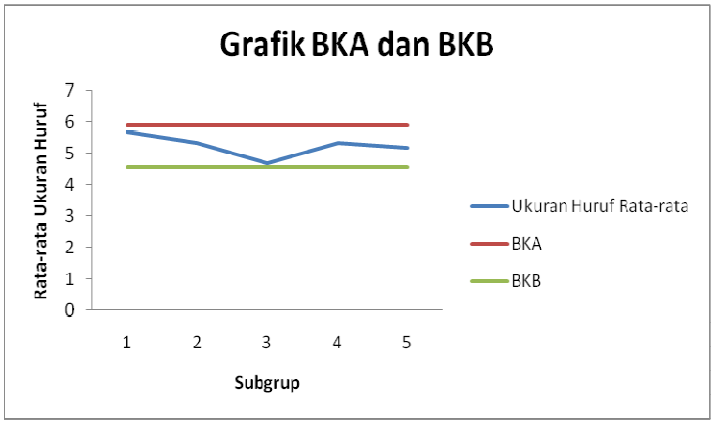
$$BKB = \bar{x} - c(\sigma_{\bar{x}})$$

$$= 5.233 - 2(0.334) = 4.566$$

$$BKA = \bar{x} + c(\sigma_{\bar{x}})$$

$$= 5.233 + 2(0.334) = 5.9$$

Grafik BKA dan BKB Warna Tulisan Hijau Kursi Samping Depan Kiri



Uji Seragam untuk Posisi Duduk di Kursi Samping Depan Kanan

- Warna Tulisan Biru

| Subgrup ke- | Ukuran Huruf ke- | | | | | | Ukuran Huruf Rata-rata |
|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | |
| 1 | 6 | 6 | 4 | 5 | 5 | 5 | 5.167 |
| 2 | 5 | 4 | 4 | 6 | 6 | 6 | 5.167 |
| 3 | 5 | 6 | 6 | 6 | 5 | 5 | 5.500 |
| 4 | 5 | 4 | 6 | 6 | 6 | 5 | 5.333 |
| 5 | 6 | 6 | 5 | 5 | 4 | 4 | 5.000 |
| | | | | | | $\bar{\bar{x}}$ | 5.233 |

$$\bar{\bar{x}} = \frac{\sum Xi}{k}$$

$$= \frac{26.167}{5}$$

$$= 5.233$$

$$\sigma = \sqrt{\frac{\sum (Xi - \bar{\bar{X}})^2}{n-1}}$$

$$= \sqrt{\frac{(6-5.233)^2 + (6-5.233)^2 + .. + (4-5.233)^2}{30-1}}$$

$$= 0.774$$

$$\sigma_{\bar{x}} = \frac{\sigma}{\sqrt{n}} = \frac{0.774}{\sqrt{6}} = 0.316$$

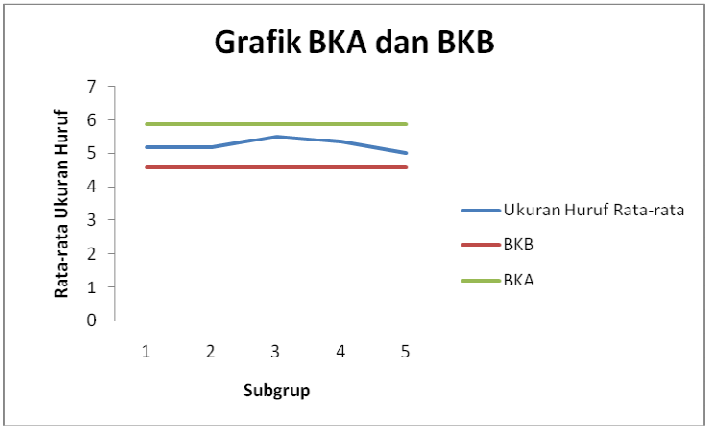
$$BKB = \bar{\bar{x}} - c(\sigma_{\bar{x}})$$

$$= 5.233 - 2(0.316) = 4.601$$

$$BKA = \bar{\bar{x}} + c(\sigma_{\bar{x}})$$

$$= 5.233 + 2(0.316) = 5.865$$

Grafik BKA dan BKB Warna Tulisan Biru Kursi Samping Depan Kanan




- Warna Tulisan Hitam

| Subgrup ke- | Ukuran Huruf ke- | | | | | | Ukuran Huruf Rata-rata |
|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | |
| 1 | 5 | 5 | 6 | 6 | 5 | 4 | 5.167 |
| 2 | 4 | 4 | 4 | 6 | 6 | 6 | 5.000 |
| 3 | 5 | 4 | 6 | 6 | 4 | 5 | 5.000 |
| 4 | 5 | 6 | 6 | 6 | 6 | 6 | 5.833 |
| 5 | 6 | 6 | 5 | 5 | 5 | 5 | 5.333 |
| | | | | | | $\bar{\bar{x}}$ | 5.267 |

$$\bar{x} = \frac{\sum Xi}{k}$$

$$= \frac{26.333}{5}$$

$$= 5.267$$

$$\sigma = \sqrt{\frac{\sum \left(Xi - \bar{X}\right)^2}{n-1}}$$

$$= \sqrt{\frac{(5-5.267)^2 + (5-5.267)^2 + .. + (5-5.267)^2}{30-1}}$$

$$= 0.785$$

$$\sigma_{\bar{x}} = \frac{\sigma}{\sqrt{n}} = \frac{0.785}{\sqrt{6}} = 0.320$$

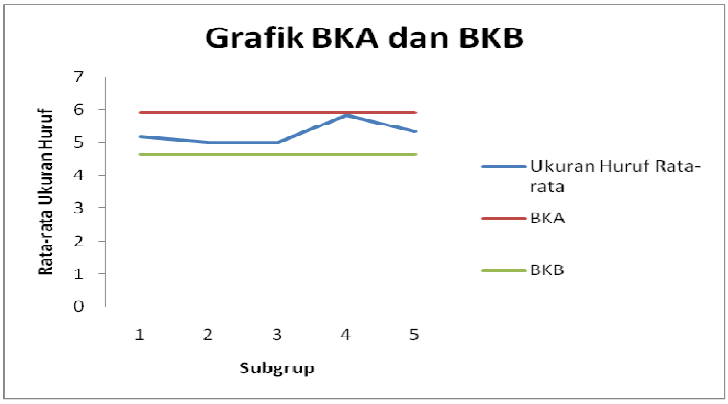
$$BKB = \bar{\bar{x}} - c(\sigma_{\bar{x}})$$

$$= 5.267 - 2(0.320) = 4.626$$

$$BKA = \bar{\bar{x}} + c(\sigma_{\bar{x}})$$

$$= 5.267 + 2(0.320) = 5.908$$

Grafik BKA dan BKB Warna Tulisan Hitam Kursi Samping Depan Kanan




- Warna Tulisan Merah

| Subgrup ke- | Ukuran Huruf ke- | | | | | | Ukuran Huruf Rata-rata |
|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | |
| 1 | 5 | 6 | 5 | 6 | 5 | 4 | 5.167 |
| 2 | 6 | 4 | 5 | 6 | 6 | 6 | 5.500 |
| 3 | 5 | 6 | 6 | 6 | 4 | 5 | 5.333 |
| 4 | 4 | 5 | 6 | 6 | 6 | 4 | 5.167 |
| 5 | 6 | 5 | 5 | 6 | 4 | 5 | 5.167 |
| | | | | | | $\bar{\bar{x}}$ | 5.267 |

$$\bar{x} = \frac{\sum Xi}{k}$$

$$= \frac{26.833}{5}$$

$$= 5.267$$

$$\sigma = \sqrt{\frac{\sum (Xi - \bar{X})^2}{n-1}}$$

$$= \sqrt{\frac{(5-5.267)^2 + (6-5.267)^2 + .. + (5-5.267)^2}{30-1}}$$

$$= 0.785$$

$$\sigma_{\bar{x}} = \frac{\sigma}{\sqrt{n}} = \frac{0.785}{\sqrt{6}} = 0.320$$

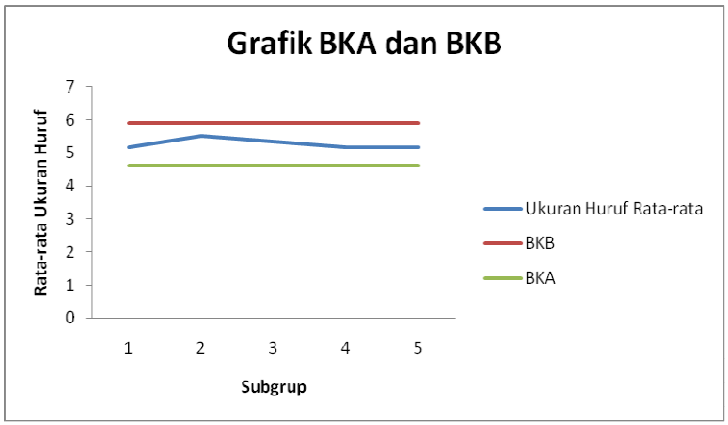
$$BKB = \bar{\bar{x}} - c(\sigma_{\bar{x}})$$

$$= 5.267 - 2(0.320) = 4.626$$

$$BKA = \bar{\bar{x}} + c(\sigma_{\bar{x}})$$

$$= 5.267 + 2(0.320) = 5.908$$

Grafik BKA dan BKB Warna Tulisan Merah Kursi Samping Depan Kanan



- Warna Tulisan Hijau

| Subgrup ke- | Ukuran Huruf ke- | | | | | | Ukuran Huruf Rata-rata |
|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | |
| 1 | 6 | 4 | 5 | 6 | 4 | 4 | 4.833 |
| 2 | 6 | 6 | 4 | 4 | 6 | 5 | 5.167 |
| 3 | 5 | 4 | 6 | 6 | 5 | 5 | 5.167 |
| 4 | 5 | 6 | 6 | 6 | 6 | 6 | 5.833 |
| 5 | 4 | 5 | 5 | 6 | 5 | 5 | 5.000 |
| | | | | | | $\bar{\bar{x}}$ | 5.200 |

$$\bar{x} = \frac{\sum Xi}{k}$$

$$= \frac{26}{5}$$

$$= 5.200$$

$$\sigma = \sqrt{\frac{\sum \left(Xi - \bar{\bar{X}}\right)^2}{n-1}}$$

$$= \sqrt{\frac{(6-5.200)^2 + (4-5.200)^2 + .. + (5-5.200)^2}{30-1}}$$

$$= 0.805$$

$$\sigma_{\bar{x}} = \frac{\sigma}{\sqrt{n}} = \frac{0.805}{\sqrt{6}} = 0.329$$

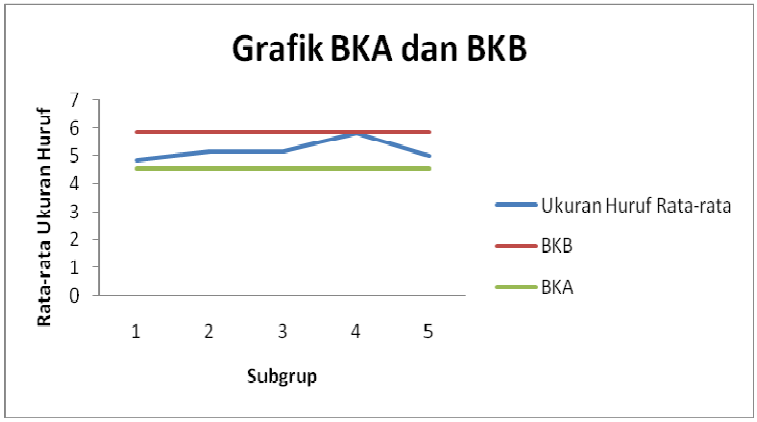
$$BKB = \bar{\bar{x}} - c\left(\sigma_{\bar{x}}\right)$$

$$= 5.200 - 2(0.329) = 4.543$$

$$BKA = \bar{\bar{x}} + c\left(\sigma_{\bar{x}}\right)$$

$$= 5.200 + 2(0.329) = 5.857$$

Grafik BKA dan BKB Warna Tulisan Hijau Kursi Samping Depan Kanan




Uji Seragam untuk Posisi Duduk di Kursi Tengah Belakang

- Warna Tulisan Biru

| Subgrup ke- | Ukuran Huruf ke- | | | | | | Ukuran Huruf Rata-rata |
|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | |
| 1 | 6 | 5 | 5 | 4 | 6 | 5 | 5.167 |
| 2 | 6 | 4 | 6 | 4 | 4 | 4 | 4.667 |
| 3 | 6 | 6 | 5 | 4 | 4 | 4 | 4.833 |
| 4 | 5 | 5 | 4 | 5 | 6 | 4 | 4.833 |
| 5 | 4 | 6 | 5 | 5 | 4 | 4 | 4.667 |
| | | | | | | $\bar{\bar{x}}$ | 4.833 |

$$\bar{x} = \frac{\sum Xi}{k}$$

$$= \frac{24.167}{5}$$

$$= 4.833$$

$$\sigma = \sqrt{\frac{\sum (Xi - \bar{X})^2}{n-1}}$$

$$= \sqrt{\frac{(6-4.833)^2 + (5-4.833)^2 + .. + (4-4.833)^2}{30-1}}$$

$$= 0.834$$

$$\sigma_{\bar{x}} = \frac{\sigma}{\sqrt{n}} = \frac{0.834}{\sqrt{6}} = 0.340$$

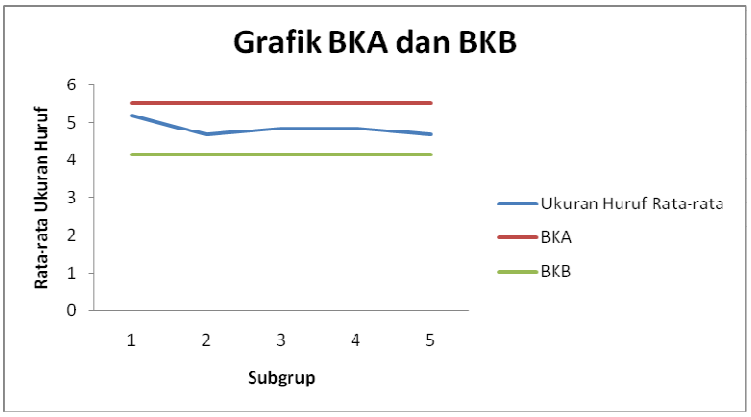
$$BKB = \bar{\bar{x}} - c(\sigma_{\bar{x}})$$

$$= 4.833 - 2(0.340) = 4.152$$

$$BKA = \bar{\bar{x}} + c(\sigma_{\bar{x}})$$

$$= 4.833 + 2(0.340) = 5.514$$

Grafik BKA dan BKB Warna Tulisan Biru Kursi Tengah Belakang




- Warna Tulisan Hitam

| Subgrup ke- | Ukuran Huruf ke- | | | | | | Ukuran Huruf Rata-rata |
|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | |
| 1 | 6 | 4 | 4 | 4 | 4 | 6 | 4.667 |
| 2 | 6 | 5 | 4 | 5 | 4 | 4 | 4.667 |
| 3 | 6 | 6 | 5 | 5 | 4 | 4 | 5.000 |
| 4 | 5 | 5 | 5 | 4 | 4 | 4 | 4.500 |
| 5 | 5 | 5 | 6 | 6 | 6 | 5 | 5.500 |
| | | | | | | $\bar{\bar{x}}$ | 4.867 |

$$\bar{x} = \frac{\sum Xi}{k}$$

$$= \frac{24.333}{5}$$

$$= 4.867$$

$$\sigma = \sqrt{\frac{\sum (Xi - \bar{X})^2}{n-1}}$$

$$= \sqrt{\frac{(6-4.867)^2 + (4-4.867)^2 + .. + (5-4.867)^2}{30-1}}$$

$$= 0.819$$

$$\sigma_{\bar{x}} = \frac{\sigma}{\sqrt{n}} = \frac{0.819}{\sqrt{6}} = 0.334$$

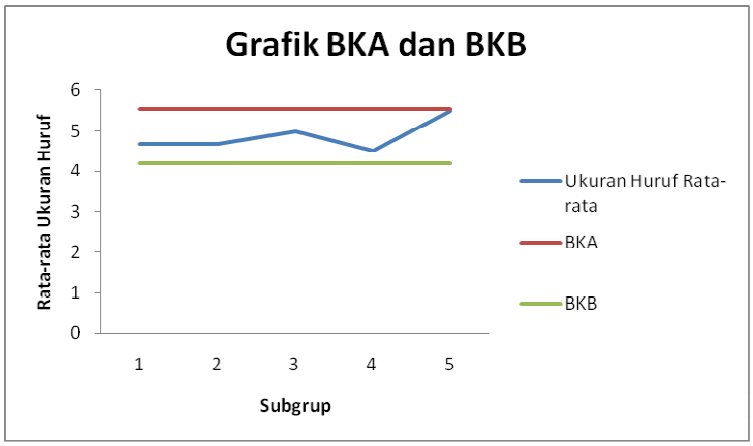
$$BKB = \bar{x} - c(\sigma_{\bar{x}})$$

$$= 4.867 - 2(0.334) = 4.199$$

$$BKA = \bar{x} + c(\sigma_{\bar{x}})$$

$$= 4.867 + 2(0.334) = 5.535$$

Grafik BKA dan BKB Warna Tulisan Hitam Kursi Tengah Belakang



- Warna Tulisan Merah

| Subgrup ke- | Ukuran Huruf ke- | | | | | | Ukuran Huruf Rata-rata |
|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | |
| 1 | 4 | 4 | 4 | 4 | 5 | 5 | 4.333 |
| 2 | 6 | 6 | 5 | 5 | 4 | 4 | 5.000 |
| 3 | 5 | 6 | 5 | 6 | 4 | 4 | 5.000 |
| 4 | 4 | 5 | 4 | 6 | 5 | 5 | 4.833 |
| 5 | 4 | 4 | 6 | 5 | 4 | 5 | 4.667 |
| | | | | | | | 4.767 |

$$\bar{\bar{x}} = \frac{\sum Xi}{k}$$

$$= \frac{23.833}{5}$$

$$= 4.767$$

$$\sigma = \sqrt{\frac{\sum \left(Xi - \bar{\bar{X}}\right)^2}{n-1}}$$

$$= \sqrt{\frac{(4-4.767)^2 + (4-4.767)^2 + .. + (5-4.767)^2}{30-1}}$$

$$= 0.774$$

$$\sigma_{\bar{x}} = \frac{\sigma}{\sqrt{n}} = \frac{0.774}{\sqrt{6}} = 0.316$$

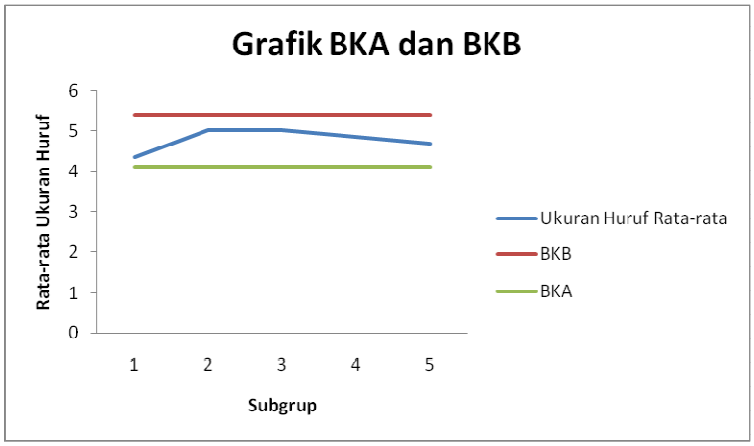
$$BKB = \bar{\bar{x}} - c\left(\sigma_{\bar{x}}\right)$$

$$= 4.767 - 2(0.316) = 4.135$$

$$BKA = \bar{\bar{x}} + c\left(\sigma_{\bar{x}}\right)$$

$$= 4.767 + 2(0.316) = 5.399$$

Grafik BKA dan BKB Warna Tulisan Merah Kursi Tengah Belakang




- Warna Tulisan Hijau

| Subgrup ke- | Ukuran Huruf ke- | | | | | | Ukuran Huruf Rata-rata |
|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | |
| 1 | 5 | 4 | 5 | 5 | 5 | 4 | 4.667 |
| 2 | 6 | 4 | 5 | 4 | 4 | 4 | 4.500 |
| 3 | 6 | 6 | 5 | 6 | 5 | 4 | 5.333 |
| 4 | 4 | 5 | 4 | 4 | 6 | 5 | 4.667 |
| 5 | 4 | 5 | 5 | 5 | 6 | 5 | 5.000 |
| | | | | | | $\bar{\bar{x}}$ | 4.833 |

$$\bar{x} = \frac{\sum Xi}{k}$$

$$= \frac{24.167}{5}$$

$$= 4.833$$

$$\sigma = \sqrt{\frac{\sum (Xi - \bar{X})^2}{n-1}}$$

$$= \sqrt{\frac{(5-4.833)^2 + (4-4.833)^2 + .. + (5-4.833)^2}{30-1}}$$

$$= 0.747$$

$$\sigma_{\bar{x}} = \frac{\sigma}{\sqrt{n}} = \frac{0.747}{\sqrt{6}} = 0.305$$

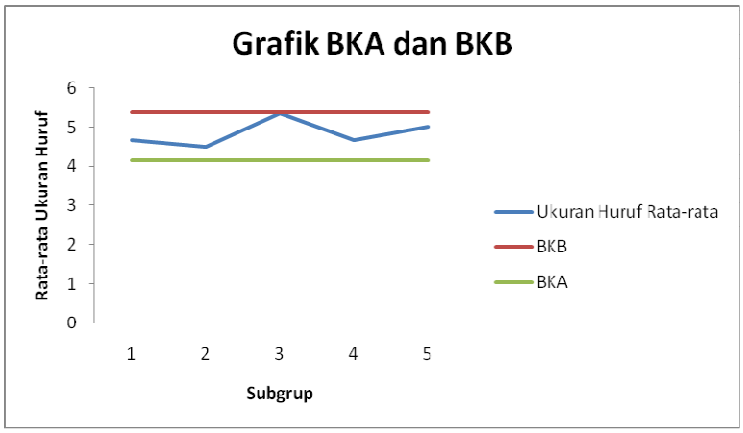
$$BKB = \bar{\bar{x}} - c(\sigma_{\bar{x}})$$

$$= 4.833 - 2(0.305) = 4.223$$

$$BKA = \bar{\bar{x}} + c(\sigma_{\bar{x}})$$

$$= 4.833 + 2(0.305) = 5.443$$

Grafik BKA dan BKB Warna Tulisan Hijau Kursi Tengah Belakang




- **Uji Cukup**

  <u>Uji Cukup untuk Posisi Duduk di Kursi Samping Depan Kiri</u>

  - Warna Tulisan Biru

    Diketahui : Tingkat Ketelitian = 10 % = 0.1

$$N' = \left( \frac{\left(\frac{c}{\alpha}\right)\sqrt{N\sum X_i^{\,2} - \left(\sum X_i\right)^2}}{\sum X_i} \right)^2$$

$$= \left[ \frac{\frac{2}{0.1}\sqrt{30\left(6^2 + 6^2 + \ldots + 5^2\right) - (6 + 6 + \ldots + 5)^2}}{6 + 6 + \ldots + 5} \right]^2$$

$$= \left[ \frac{20\sqrt{30(830)-(156)^2}}{156} \right]^2 = 9.270$$

Karena N' < N → 9.270 < 30, maka data cukup.

- Warna Tulisan Hitam

Diketahui : Tingkat Ketelitian = 10 % = 0.1

$$N' = \left( \frac{\left(\frac{c}{\alpha}\right)\sqrt{N\sum X_i^{\,2} - \left(\sum X_i\right)^2}}{\sum X_i} \right)^2$$

$$= \left[ \frac{\frac{2}{0.1}\sqrt{30\left(5^2+6^2+...+4^2\right)-(5+6+...+4)^2}}{5+6+...+4} \right]^2$$

$$= \left[ \frac{20\sqrt{30(848)-(158)^2}}{158} \right]^2 = 7.627$$

Karena N' < N → 7.627 < 30, maka data cukup.

- Warna Tulisan Merah

Diketahui : Tingkat Ketelitian = 10 % = 0.1

$$N' = \left( \frac{\left(\frac{c}{\alpha}\right)\sqrt{N\sum X_i^{\,2} - \left(\sum X_i\right)^2}}{\sum X_i} \right)^2$$

$$= \left[ \frac{\frac{2}{0.1}\sqrt{30\left(5^2+6^2+...+5^2\right)-(5+6+...+5)^2}}{5+6+...+5} \right]^2$$

$$= \left[ \frac{20\sqrt{30(859)-(159)^2}}{159} \right]^2 = 7.737$$

Karena N' < N → 7.737 < 30, maka data cukup.

- Warna Tulisan Hijau

  Diketahui : Tingkat Ketelitian = 10 % = 0.1

$$N' = \left( \frac{\left(\frac{c}{\alpha}\right)\sqrt{N\sum X_i^{\,2} - \left(\sum X_i\right)^2}}{\sum X_i} \right)^2$$

$$= \left[ \frac{\frac{2}{0.1}\sqrt{30\left(6^2 + 6^2 + ... + 4^2\right) - \left(6 + 6 + ... + 4\right)^2}}{6 + 6 + ... + 4} \right]^2$$

$$= \left[ \frac{20\sqrt{30(841) - (157)^2}}{157} \right]^2 = 9.428$$

  Karena N' < N → 9.428 < 30, maka data cukup.

<u>Uji Cukup untuk Posisi Duduk di Kursi Samping Depan Kanan</u>

- Warna Tulisan Biru

  Diketahui : Tingkat Ketelitian = 10 % = 0.1

$$N' = \left( \frac{\left(\frac{c}{\alpha}\right)\sqrt{N\sum X_i^{\,2} - \left(\sum X_i\right)^2}}{\sum X_i} \right)^2$$

$$= \left[ \frac{\frac{2}{0.1}\sqrt{30\left(6^2 + 6^2 + ... + 4^2\right) - \left(6 + 6 + ... + 4\right)^2}}{6 + 6 + ... + 4} \right]^2$$

$$= \left[ \frac{20\sqrt{30(839) - (157)^2}}{157} \right]^2 = 8.455$$

  Karena N' < N → 8.455 < 30, maka data cukup.

- Warna Tulisan Hitam

  Diketahui : Tingkat Ketelitian = 10 % = 0.1

$$N' = \left( \frac{\left(\frac{c}{\alpha}\right)\sqrt{N\sum X_i^{\,2} - \left(\sum X_i\right)^2}}{\sum X_i} \right)^2$$

$$= \left[ \frac{\frac{2}{0.1}\sqrt{30\left(5^2 + 5^2 + ... + 5^2\right) - \left(5 + 5 + ... + 5\right)^2}}{5 + 6 + ... + 5} \right]^2$$

$$= \left[ \frac{20\sqrt{30(850) - (158)^2}}{158} \right]^2 = 8.588$$

Karena N' < N → 8.588 < 30, maka data cukup.

- Warna Tulisan Merah

Diketahui : Tingkat Ketelitian = 10 % = 0.1

$$N' = \left( \frac{\left(\frac{c}{\alpha}\right)\sqrt{N\sum X_i^{\,2} - \left(\sum X_i\right)^2}}{\sum X_i} \right)^2$$

$$= \left[ \frac{\frac{2}{0.1}\sqrt{30\left(5^2 + 6^2 + ... + 5^2\right) - \left(5 + 6 + ... + 5\right)^2}}{5 + 6 + ... + 5} \right]^2$$

$$= \left[ \frac{20\sqrt{30(850) - (158)^2}}{158} \right]^2 = 8.588$$

Karena N' < N → 8.588 < 30, maka data cukup.

- Warna Tulisan Hijau

Diketahui : Tingkat Ketelitian = 10 % = 0.1

$$N' = \left( \frac{\left(\frac{c}{\alpha}\right)\sqrt{N\sum X_i^{\,2} - \left(\sum X_i\right)^2}}{\sum X_i} \right)^2$$

$$= \left[ \frac{\frac{2}{0.1}\sqrt{30\left(6^2 + 4^2 + ... + 5^2\right) - \left(6 + 4 + ... + 5\right)^2}}{6 + 4 + ... + 5} \right]^2$$

$$= \left[ \frac{20\sqrt{30(830) - (156)^2}}{156} \right]^2 = 9.270$$

Karena N' < N → 9.270 < 30, maka data cukup.

<u>Uji Cukup untuk Posisi Duduk di Kursi Tengah Belakang</u>

- Warna Tulisan Biru

  Diketahui : Tingkat Ketelitian = 10 % = 0.1

$$N' = \left( \frac{\left(\frac{c}{\alpha}\right)\sqrt{N\sum X_i^{\,2} - \left(\sum X_i\right)^2}}{\sum X_i} \right)^2$$

$$= \left[ \frac{\frac{2}{0.1}\sqrt{30\left(6^2 + 5^2 + ... + 4^2\right) - \left(6 + 5 + ... + 4\right)^2}}{6 + 5 + ... + 4} \right]^2$$

$$= \left[ \frac{20\sqrt{30(721) - (145)^2}}{145} \right]^2 = 11.510$$

Karena N' < N → 11.510 < 30, maka data cukup.

- Warna Tulisan Hitam

  Diketahui : Tingkat Ketelitian = 10 % = 0.1

$$N' = \left( \frac{\left(\frac{c}{\alpha}\right)\sqrt{N\sum X_i^{\,2} - \left(\sum X_i\right)^2}}{\sum X_i} \right)^2$$

$$= \left[ \frac{\frac{2}{0.1}\sqrt{30\left(6^2 + 4^2 + ... + 5^2\right) - \left(6 + 4 + ... + 5\right)^2}}{6 + 4 + ... + 5} \right]^2$$

$$= \left[ \frac{20\sqrt{30(730) - (146)^2}}{146} \right]^2 = 10.959$$

Karena N' < N → 10.959 < 30, maka data cukup.

- Warna Tulisan Merah

Diketahui : Tingkat Ketelitian = 10 % = 0.1

$$N' = \left( \frac{\left(\frac{c}{\alpha}\right)\sqrt{N\sum X_i^{\,2} - \left(\sum X_i\right)^2}}{\sum X_i} \right)^2$$

$$= \left[ \frac{\frac{2}{0.1}\sqrt{30\left(4^2 + 4^2 + ... + 5^2\right) - \left(4 + 4 + ... + 5\right)^2}}{4 + 4 + ... + 5} \right]^2$$

$$= \left[ \frac{20\sqrt{30(699) - (143)^2}}{143} \right]^2 = 10.191$$

Karena N' < N → 10.191 < 30, maka data cukup.

- Warna Tulisan Hijau

Diketahui : Tingkat Ketelitian = 10 % = 0.1

$$N' = \left( \frac{\left(\frac{c}{\alpha}\right)\sqrt{N\sum X_i^{\,2} - \left(\sum X_i\right)^2}}{\sum X_i} \right)^2$$

$$= \left[ \frac{\frac{2}{0.1}\sqrt{30\left(5^2 + 4^2 + ... + 5^2\right) - \left(5 + 4 + ... + 5\right)^2}}{5 + 4 + ... + 5} \right]^2$$

$$= \left[ \frac{20\sqrt{30(717) - (145)^2}}{145} \right]^2 = 9.227$$

Karena N' < N → 9.227 < 30, maka data cukup.

# LAMPIRAN 3

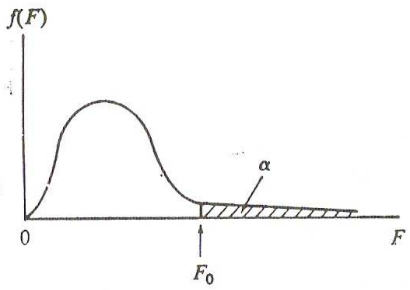
- **Tabel Uji Normal**
- **Tabel Uji F**
- **Tabel Uji $\chi^2$**

- **Uji Normal**

**TABEL A.4**

Wilayah Luas Di Bawah Kurva Normal

| z | 0.00 | 0.01 | 0.02 | 0.03 | 0.04 | 0.05 | 0.06 | 0.07 | 0.08 | 0.09 |
|---|---|---|---|---|---|---|---|---|---|---|
| −3.4 | 0.0003 | 0.0003 | 0.0003 | 0.0003 | 0.0003 | 0.0003 | 0.0003 | 0.0003 | 0.0003 | 0.0002 |
| −3.3 | 0.0005 | 0.0005 | 0.0005 | 0.0004 | 0.0004 | 0.0004 | 0.0004 | 0.0004 | 0.0004 | 0.0003 |
| −3.2 | 0.0007 | 0.0007 | 0.0006 | 0.0006 | 0.0006 | 0.0006 | 0.0006 | 0.0005 | 0.0005 | 0.0005 |
| −3.1 | 0.0010 | 0.0009 | 0.0009 | 0.0009 | 0.0008 | 0.0008 | 0.0008 | 0.0008 | 0.0007 | 0.0007 |
| −3.0 | 0.0013 | 0.0013 | 0.0013 | 0.0012 | 0.0012 | 0.0011 | 0.0011 | 0.0011 | 0.0010 | 0.0010 |
| −2.9 | 0.0019 | 0.0018 | 0.0017 | 0.0017 | 0.0016 | 0.0016 | 0.0015 | 0.0015 | 0.0014 | 0.0014 |
| −2.8 | 0.0026 | 0.0025 | 0.0024 | 0.0023 | 0.0023 | 0.0022 | 0.0021 | 0.0021 | 0.0020 | 0.0019 |
| −2.7 | 0.0035 | 0.0034 | 0.0033 | 0.0032 | 0.0031 | 0.0030 | 0.0029 | 0.0028 | 0.0027 | 0.0026 |
| −2.6 | 0.0047 | 0.0045 | 0.0044 | 0.0043 | 0.0041 | 0.0040 | 0.0039 | 0.0038 | 0.0037 | 0.0036 |
| −2.5 | 0.0062 | 0.0060 | 0.0059 | 0.0057 | 0.0055 | 0.0054 | 0.0052 | 0.0051 | 0.0049 | 0.0048 |
| −2.4 | 0.0082 | 0.0080 | 0.0078 | 0.0075 | 0.0073 | 0.0071 | 0.0069 | 0.0068 | 0.0066 | 0.0064 |
| −2.3 | 0.0107 | 0.0104 | 0.0102 | 0.0099 | 0.0096 | 0.0094 | 0.0091 | 0.0089 | 0.0087 | 0.0084 |
| −2.2 | 0.0139 | 0.0136 | 0.0132 | 0.0129 | 0.0125 | 0.0122 | 0.0119 | 0.0116 | 0.0113 | 0.0110 |
| −2.1 | 0.0179 | 0.0174 | 0.0170 | 0.0166 | 0.0162 | 0.0158 | 0.0154 | 0.0150 | 0.0146 | 0.0143 |
| −2.0 | 0.0228 | 0.0222 | 0.0217 | 0.0212 | 0.0207 | 0.0202 | 0.0197 | 0.0192 | 0.0188 | 0.0183 |
| −1.9 | 0.0287 | 0.0281 | 0.0274 | 0.0268 | 0.0262 | 0.0256 | 0.0250 | 0.0244 | 0.0239 | 0.0233 |
| −1.8 | 0.0359 | 0.0352 | 0.0344 | 0.0336 | 0.0329 | 0.0322 | 0.0314 | 0.0307 | 0.0301 | 0.0294 |
| −1.7 | 0.0446 | 0.0436 | 0.0427 | 0.0418 | 0.0409 | 0.0401 | 0.0392 | 0.0384 | 0.0375 | 0.0367 |
| −1.6 | 0.0548 | 0.0537 | 0.0526 | 0.0516 | 0.0505 | 0.0495 | 0.0485 | 0.0475 | 0.0465 | 0.0455 |
| −1.5 | 0.0668 | 0.0655 | 0.0643 | 0.0630 | 0.0618 | 0.0606 | 0.0594 | 0.0582 | 0.0571 | 0.0559 |
| −1.4 | 0.0808 | 0.0793 | 0.0778 | 0.0764 | 0.0749 | 0.0735 | 0.0722 | 0.0708 | 0.0694 | 0.0681 |
| −1.3 | 0.0968 | 0.0951 | 0.0934 | 0.0918 | 0.0901 | 0.0885 | 0.0869 | 0.0853 | 0.0838 | 0.0823 |
| −1.2 | 0.1151 | 0.1131 | 0.1112 | 0.1093 | 0.1075 | 0.1056 | 0.1038 | 0.1020 | 0.1003 | 0.0985 |
| −1.1 | 0.1357 | 0.1335 | 0.1314 | 0.1292 | 0.1271 | 0.1251 | 0.1230 | 0.1210 | 0.1190 | 0.1170 |
| −1.0 | 0.1587 | 0.1562 | 0.1539 | 0.1515 | 0.1492 | 0.1469 | 0.1446 | 0.1423 | 0.1401 | 0.1379 |
| −0.9 | 0.1841 | 0.1814 | 0.1788 | 0.1762 | 0.1736 | 0.1711 | 0.1685 | 0.1660 | 0.1635 | 0.1611 |
| −0.8 | 0.2119 | 0.2090 | 0.2061 | 0.2033 | 0.2005 | 0.1977 | 0.1949 | 0.1922 | 0.1894 | 0.1867 |
| −0.7 | 0.2420 | 0.2389 | 0.2358 | 0.2327 | 0.2296 | 0.2266 | 0.2236 | 0.2206 | 0.2177 | 0.2148 |
| −0.6 | 0.2743 | 0.2709 | 0.2676 | 0.2643 | 0.2611 | 0.2578 | 0.2546 | 0.2514 | 0.2483 | 0.2451 |
| −0.5 | 0.3085 | 0.3050 | 0.3015 | 0.2981 | 0.2946 | 0.2912 | 0.2877 | 0.2843 | 0.2810 | 0.2776 |
| −0.4 | 0.3446 | 0.3409 | 0.3372 | 0.3336 | 0.3300 | 0.3264 | 0.3228 | 0.3192 | 0.3156 | 0.3121 |
| −0.3 | 0.3821 | 0.3783 | 0.3745 | 0.3707 | 0.3669 | 0.3632 | 0.3594 | 0.3557 | 0.3520 | 0.3483 |
| −0.2 | 0.4207 | 0.4168 | 0.4129 | 0.4090 | 0.4052 | 0.4013 | 0.3974 | 0.3936 | 0.3897 | 0.3859 |
| −0.1 | 0.4602 | 0.4562 | 0.4522 | 0.4483 | 0.4443 | 0.4404 | 0.4364 | 0.4325 | 0.4286 | 0.4247 |
| −0.0 | 0.5000 | 0.4960 | 0.4920 | 0.4880 | 0.4840 | 0.4801 | 0.4761 | 0.4721 | 0.4681 | 0.4641 |
| 0.0 | 0.5000 | 0.5040 | 0.5080 | 0.5120 | 0.5160 | 0.5199 | 0.5239 | 0.5279 | 0.5319 | 0.5359 |
| 0.1 | 0.5398 | 0.5438 | 0.5478 | 0.5517 | 0.5557 | 0.5596 | 0.5636 | 0.5675 | 0.5714 | 0.5753 |
| 0.2 | 0.5793 | 0.5832 | 0.5871 | 0.5910 | 0.5948 | 0.5987 | 0.6026 | 0.6064 | 0.6103 | 0.6141 |
| 0.3 | 0.6179 | 0.6217 | 0.6255 | 0.6293 | 0.6331 | 0.6368 | 0.6406 | 0.6443 | 0.6480 | 0.6517 |
| 0.4 | 0.6554 | 0.6591 | 0.6628 | 0.6664 | 0.6700 | 0.6736 | 0.6772 | 0.6808 | 0.6844 | 0.6879 |
| 0.5 | 0.6915 | 0.6950 | 0.6985 | 0.7019 | 0.7054 | 0.7088 | 0.7123 | 0.7157 | 0.7190 | 0.7224 |
| 0.6 | 0.7257 | 0.7291 | 0.7324 | 0.7357 | 0.7389 | 0.7422 | 0.7454 | 0.7486 | 0.7517 | 0.7549 |
| 0.7 | 0.7580 | 0.7611 | 0.7642 | 0.7673 | 0.7704 | 0.7734 | 0.7764 | 0.7794 | 0.7823 | 0.7852 |
| 0.8 | 0.7881 | 0.7910 | 0.7939 | 0.7967 | 0.7995 | 0.8023 | 0.8051 | 0.8078 | 0.8106 | 0.8133 |
| 0.9 | 0.8159 | 0.8186 | 0.8212 | 0.8238 | 0.8264 | 0.8289 | 0.8315 | 0.8340 | 0.8365 | 0.8389 |
| 1.0 | 0.8413 | 0.8438 | 0.8461 | 0.8485 | 0.8508 | 0.8531 | 0.8554 | 0.8577 | 0.8599 | 0.8621 |
| 1.1 | 0.8643 | 0.8665 | 0.8686 | 0.8708 | 0.8729 | 0.8749 | 0.8770 | 0.8790 | 0.8810 | 0.8830 |
| 1.2 | 0.8849 | 0.8869 | 0.8888 | 0.8907 | 0.8925 | 0.8944 | 0.8962 | 0.8980 | 0.8997 | 0.9015 |
| 1.3 | 0.9032 | 0.9049 | 0.9066 | 0.9082 | 0.9099 | 0.9115 | 0.9131 | 0.9147 | 0.9162 | 0.9177 |
| 1.4 | 0.9192 | 0.9207 | 0.9222 | 0.9236 | 0.9251 | 0.9265 | 0.9278 | 0.9292 | 0.9306 | 0.9319 |
| 1.5 | 0.9332 | 0.9345 | 0.9357 | 0.9370 | 0.9382 | 0.9394 | 0.9406 | 0.9418 | 0.9429 | 0.9441 |
| 1.6 | 0.9452 | 0.9463 | 0.9474 | 0.9484 | 0.9495 | 0.9505 | 0.9515 | 0.9525 | 0.9535 | 0.9545 |
| 1.7 | 0.9554 | 0.9564 | 0.9573 | 0.9582 | 0.9591 | 0.9599 | 0.9608 | 0.9616 | 0.9625 | 0.9633 |
| 1.8 | 0.9641 | 0.9649 | 0.9656 | 0.9664 | 0.9671 | 0.9678 | 0.9686 | 0.9693 | 0.9699 | 0.9706 |
| 1.9 | 0.9713 | 0.9719 | 0.9726 | 0.9732 | 0.9738 | 0.9744 | 0.9750 | 0.9756 | 0.9761 | 0.9767 |
| 2.0 | 0.9772 | 0.9778 | 0.9783 | 0.9788 | 0.9793 | 0.9798 | 0.9803 | 0.9808 | 0.9812 | 0.9817 |
| 2.1 | 0.9821 | 0.9826 | 0.9830 | 0.9834 | 0.9838 | 0.9842 | 0.9846 | 0.9850 | 0.9854 | 0.9857 |
| 2.2 | 0.9861 | 0.9864 | 0.9868 | 0.9871 | 0.9875 | 0.9878 | 0.9881 | 0.9884 | 0.9887 | 0.9890 |
| 2.3 | 0.9893 | 0.9896 | 0.9898 | 0.9901 | 0.9904 | 0.9906 | 0.9909 | 0.9911 | 0.9913 | 0.9916 |
| 2.4 | 0.9918 | 0.9920 | 0.9922 | 0.9925 | 0.9927 | 0.9929 | 0.9931 | 0.9932 | 0.9934 | 0.9936 |
| 2.5 | 0.9938 | 0.9940 | 0.9941 | 0.9943 | 0.9945 | 0.9946 | 0.9948 | 0.9949 | 0.9951 | 0.9952 |
| 2.6 | 0.9953 | 0.9955 | 0.9956 | 0.9957 | 0.9959 | 0.9960 | 0.9961 | 0.9962 | 0.9963 | 0.9964 |
| 2.7 | 0.9965 | 0.9966 | 0.9967 | 0.9968 | 0.9969 | 0.9970 | 0.9971 | 0.9972 | 0.9973 | 0.9974 |
| 2.8 | 0.9974 | 0.9975 | 0.9976 | 0.9977 | 0.9977 | 0.9978 | 0.9979 | 0.9979 | 0.9980 | 0.9981 |
| 2.9 | 0.9981 | 0.9982 | 0.9982 | 0.9983 | 0.9984 | 0.9984 | 0.9985 | 0.9985 | 0.9986 | 0.9986 |
| 3.0 | 0.9987 | 0.9987 | 0.9987 | 0.9988 | 0.9988 | 0.9989 | 0.9989 | 0.9989 | 0.9990 | 0.9990 |
| 3.1 | 0.9990 | 0.9991 | 0.9991 | 0.9991 | 0.9992 | 0.9992 | 0.9992 | 0.9992 | 0.9993 | 0.9993 |
| 3.2 | 0.9993 | 0.9993 | 0.9994 | 0.9994 | 0.9994 | 0.9994 | 0.9994 | 0.9995 | 0.9995 | 0.9995 |
| 3.3 | 0.9995 | 0.9995 | 0.9995 | 0.9996 | 0.9996 | 0.9996 | 0.9996 | 0.9996 | 0.9996 | 0.9997 |
| 3.4 | 0.9997 | 0.9997 | 0.9997 | 0.9997 | 0.9997 | 0.9997 | 0.9997 | 0.9997 | 0.9997 | 0.9998 |




Given $\nu_1$ and $\nu_2$, the table gives the $F_0$ value with $\alpha$ of the area above it, that is,

$P(F \geq F_0) = \alpha$

| | | $\nu_1$ (numerator) | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $\nu_2$ | $\alpha$ | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 14 | 15 | 19 | 20 | 24 | 30 | 50 | 100 | 500 | ∞ |
| | .10 | 39.9 | 49.5 | 53.6 | 55.8 | 57.2 | 58.2 | 58.9 | 59.4 | 59.9 | 60.2 | 60.5 | 60.7 | 61.1 | 61.2 | 61.6 | 61.7 | 62.0 | 62.3 | 62.7 | 63.0 | 63.3 | 63.3 |
| 1 | .05 | 161 | 200 | 216 | 225 | 230 | 234 | 237 | 239 | 241 | 242 | 243 | 244 | 245 | 246 | 248 | 248 | 249 | 250 | 252 | 253 | 254 | 254 |
| | .10 | 8.53 | 9.00 | 9.16 | 9.24 | 9.29 | 9.33 | 9.35 | 9.37 | 9.38 | 9.39 | 9.40 | 9.41 | 9.42 | 9.42 | 9.44 | 9.44 | 9.45 | 9.46 | 9.47 | 9.48 | 9.49 | 9.49 |
| 2 | .05 | 18.5 | 19.0 | 19.2 | 19.2 | 19.3 | 19.3 | 19.4 | 19.4 | 19.4 | 19.4 | 19.4 | 19.4 | 19.4 | 19.4 | 19.4 | 19.4 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 |
| | .01 | 98.5 | 99.0 | 99.2 | 99.2 | 99.3 | 99.3 | 99.4 | 99.4 | 99.4 | 99.4 | 99.4 | 99.4 | 99.4 | 99.4 | 99.4 | 99.4 | 99.5 | 99.5 | 99.5 | 99.5 | 99.5 | 99.5 |
| | .10 | 5.54 | 5.46 | 5.39 | 5.34 | 5.31 | 5.28 | 5.27 | 5.25 | 5.24 | 5.23 | 5.22 | 5.22 | 5.20 | 5.20 | 5.18 | 5.18 | 5.18 | 5.17 | 5.15 | 5.14 | 5.14 | 5.13 |
| 3 | .05 | 10.1 | 9.55 | 9.28 | 9.12 | 9.10 | 8.94 | 8.89 | 8.85 | 8.81 | 8.79 | 8.76 | 8.74 | 8.71 | 8.70 | 8.67 | 8.66 | 8.64 | 8.62 | 8.58 | 8.55 | 8.53 | 8.53 |
| | .01 | 34.1 | 30.8 | 29.5 | 28.7 | 28.2 | 27.9 | 27.7 | 27.5 | 27.3 | 27.2 | 27.1 | 27.1 | 26.9 | 26.9 | 26.7 | 26.7 | 26.6 | 26.5 | 26.4 | 26.2 | 26.1 | 26.1 |
| | .10 | 4.54 | 4.32 | 4.19 | 4.11 | 4.05 | 4.01 | 3.98 | 3.95 | 3.94 | 3.92 | 3.91 | 3.90 | 3.88 | 3.87 | 3.84 | 3.84 | 3.83 | 3.82 | 3.80 | 3.78 | 3.76 | 3.76 |
| 4 | .05 | 7.71 | 6.94 | 6.59 | 6.39 | 6.26 | 6.16 | 6.09 | 6.04 | 6.00 | 5.96 | 5.94 | 5.91 | 5.87 | 5.86 | 5.81 | 5.80 | 5.77 | 5.75 | 5.70 | 5.66 | 5.64 | 5.63 |
| | .01 | 21.2 | 18.0 | 16.7 | 16.0 | 15.5 | 15.2 | 15.0 | 14.8 | 14.7 | 14.5 | 14.4 | 14.4 | 14.2 | 14.2 | 14.0 | 14.0 | 13.9 | 13.8 | 13.7 | 13.6 | 13.5 | 13.5 |
| | .10 | 4.06 | 3.78 | 3.62 | 3.52 | 3.45 | 3.40 | 3.37 | 3.34 | 3.32 | 3.30 | 3.28 | 3.27 | 3.25 | 3.24 | 3.21 | 3.21 | 3.19 | 3.17 | 3.15 | 3.13 | 3.11 | 3.10 |
| 5 | .05 | 6.61 | 5.79 | 5.41 | 5.19 | 5.05 | 4.95 | 4.88 | 4.82 | 4.77 | 4.74 | 4.71 | 4.68 | 4.64 | 4.62 | 4.57 | 4.56 | 4.53 | 4.50 | 4.44 | 4.41 | 4.37 | 4.36 |
| | .01 | 16.26 | 13.27 | 12.06 | 11.39 | 10.97 | 10.67 | 10.46 | 10.29 | 10.16 | 10.05 | 9.96 | 9.89 | 9.77 | 9.72 | 9.58 | 9.55 | 9.47 | 9.38 | 9.24 | 9.13 | 9.04 | 9.02 |

The degrees of freedom are $\nu_1$ for the numerator and $\nu_2$ for the denominator.

## Table B-6 The $F$ distribution ($\alpha$ = 0.10, 0.05, and 0.01)

$\nu_1$ (numerator)

| $\nu_2$ | $\alpha$ | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 14 | 15 | 19 | 20 | 24 | 30 | 50 | 100 | 500 | $\infty$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | .10 | 3.78 | 3.46 | 3.29 | 3.18 | 3.11 | 3.05 | 3.01 | 2.98 | 2.96 | 2.94 | 2.92 | 2.90 | 2.88 | 2.87 | 2.84 | 2.84 | 2.82 | 2.80 | 2.77 | 2.75 | 2.73 | 2.72 |
| 6 | .05 | 5.99 | 5.14 | 4.76 | 4.53 | 4.39 | 4.28 | 4.21 | 4.15 | 4.10 | 4.06 | 4.03 | 4.00 | 3.96 | 3.94 | 3.88 | 3.87 | 3.84 | 3.81 | 3.75 | 3.71 | 3.68 | 3.67 |
| | .01 | 13.74 | 10.92 | 9.78 | 9.15 | 8.75 | 8.47 | 8.26 | 8.10 | 7.98 | 7.87 | 7.79 | 7.72 | 7.60 | 7.56 | 7.42 | 7.40 | 7.31 | 7.23 | 7.09 | 6.99 | 6.90 | 6.88 |
| | .10 | 3.59 | 3.26 | 3.07 | 2.96 | 2.88 | 2.83 | 2.78 | 2.75 | 2.72 | 2.70 | 2.68 | 2.67 | 2.64 | 2.63 | 2.60 | 2.59 | 2.58 | 2.56 | 2.52 | 2.50 | 2.48 | 2.47 |
| 7 | .05 | 5.59 | 4.74 | 4.35 | 4.12 | 3.97 | 3.87 | 3.79 | 3.73 | 3.68 | 3.64 | 3.60 | 3.57 | 3.53 | 3.51 | 3.46 | 3.44 | 3.41 | 3.38 | 3.32 | 3.27 | 3.24 | 3.23 |
| | .01 | 12.25 | 9.55 | 8.45 | 7.85 | 7.46 | 7.19 | 6.99 | 6.84 | 6.72 | 6.62 | 6.54 | 6.47 | 6.36 | 6.31 | 6.18 | 6.16 | 5.07 | 5.99 | 5.86 | 5.75 | 5.67 | 5.65 |
| | .10 | 3.46 | 3.11 | 2.92 | 2.81 | 2.73 | 2.67 | 2.62 | 2.59 | 2.56 | 2.54 | 2.52 | 2.50 | 2.47 | 2.46 | 2.43 | 2.42 | 2.40 | 2.38 | 2.35 | 2.32 | 2.30 | 2.29 |
| 8 | .05 | 5.32 | 4.46 | 4.07 | 3.84 | 3.69 | 3.58 | 3.50 | 3.44 | 3.39 | 3.35 | 3.31 | 3.28 | 3.24 | 3.22 | 3.16 | 3.15 | 3.12 | 3.08 | 3.02 | 2.97 | 2.94 | 2.93 |
| | .01 | 11.26 | 8.65 | 7.59 | 7.01 | 6.63 | 6.37 | 6.18 | 6.03 | 5.91 | 5.81 | 5.73 | 5.67 | 5.56 | 5.52 | 5.38 | 5.36 | 5.28 | 5.20 | 5.07 | 4.96 | 4.88 | 4.86 |
| | .10 | 3.36 | 3.01 | 2.81 | 2.69 | 2.61 | 2.55 | 2.51 | 2.47 | 2.44 | 2.42 | 2.40 | 2.38 | 2.35 | 2.34 | 2.31 | 2.30 | 2.28 | 2.25 | 2.22 | 2.19 | 2.17 | 2.16 |
| 9 | .05 | 5.12 | 4.26 | 3.86 | 3.63 | 3.48 | 3.37 | 3.29 | 3.23 | 3.18 | 3.14 | 3.10 | 3.07 | 3.03 | 3.01 | 2.95 | 2.94 | 2.90 | 2.86 | 2.80 | 2.76 | 2.72 | 2.71 |
| | .01 | 10.56 | 8.02 | 6.99 | 6.42 | 6.06 | 5.80 | 5.61 | 5.47 | 5.35 | 5.26 | 5.18 | 5.11 | 5.00 | 4.96 | 4.83 | 4.81 | 4.73 | 4.65 | 4.52 | 4.42 | 4.33 | 4.31 |
| | .10 | 3.28 | 2.92 | 2.73 | 2.61 | 2.52 | 2.46 | 2.41 | 2.38 | 2.35 | 2.32 | 2.30 | 2.28 | 2.25 | 2.24 | 2.21 | 2.20 | 2.18 | 2.16 | 2.12 | 2.09 | 2.06 | 2.06 |
| 10 | .05 | 4.96 | 4.10 | 3.71 | 3.48 | 3.33 | 3.22 | 3.14 | 3.07 | 3.02 | 2.98 | 2.94 | 2.91 | 2.86 | 2.85 | 2.78 | 2.77 | 2.74 | 2.70 | 2.64 | 2.59 | 2.55 | 2.54 |
| | .01 | 10.04 | 7.56 | 6.55 | 5.99 | 5.64 | 5.39 | 5.20 | 5.06 | 4.94 | 4.85 | 4.77 | 4.71 | 4.60 | 4.56 | 4.43 | 4.41 | 4.33 | 4.25 | 4.12 | 4.01 | 3.93 | 3.91 |
| | .10 | 3.23 | 2.86 | 2.66 | 2.54 | 2.45 | 2.39 | 2.34 | 2.30 | 2.27 | 2.25 | 2.23 | 2.21 | 2.18 | 2.17 | 2.13 | 2.12 | 2.10 | 2.08 | 2.04 | 2.00 | 1.98 | 1.97 |
| 11 | .05 | 4.84 | 3.98 | 3.59 | 3.36 | 3.20 | 3.09 | 3.01 | 2.95 | 2.90 | 2.85 | 2.82 | 2.79 | 2.74 | 2.72 | 2.66 | 2.65 | 2.61 | 2.57 | 2.51 | 2.46 | 2.42 | 2.40 |
| | .01 | 9.65 | 7.21 | 6.22 | 5.67 | 5.32 | 5.07 | 4.89 | 4.74 | 4.63 | 4.54 | 4.46 | 4.40 | 4.29 | 4.25 | 4.12 | 4.10 | 4.02 | 3.94 | 3.81 | 3.71 | 3.62 | 3.60 |
| | .10 | 3.18 | 2.81 | 2.61 | 2.48 | 2.39 | 2.33 | 2.28 | 2.24 | 2.21 | 2.19 | 2.17 | 2.15 | 2.11 | 2.10 | 2.07 | 2.06 | 2.04 | 2.01 | 1.97 | 1.94 | 1.91 | 1.90 |
| 12 | .05 | 4.75 | 3.89 | 3.49 | 3.26 | 3.11 | 3.00 | 2.91 | 2.85 | 2.80 | 2.75 | 2.72 | 2.69 | 2.64 | 2.62 | 2.56 | 2.54 | 2.51 | 2.47 | 2.40 | 2.35 | 2.31 | 2.30 |
| | .01 | 9.33 | 6.93 | 5.95 | 5.41 | 5.06 | 4.82 | 4.64 | 4.50 | 4.39 | 4.30 | 4.22 | 4.16 | 4.05 | 4.01 | 3.88 | 3.86 | 3.78 | 3.70 | 3.57 | 3.47 | 3.38 | 3.36 |
| | .10 | 3.10 | 2.73 | 2.52 | 2.39 | 2.31 | 2.24 | 2.19 | 2.15 | 2.12 | 2.10 | 2.08 | 2.05 | 2.02 | 2.01 | 1.97 | 1.96 | 1.94 | 1.91 | 1.87 | 1.83 | 1.80 | 1.80 |
| 14 | .05 | 4.60 | 3.74 | 3.34 | 3.11 | 2.96 | 2.85 | 2.76 | 2.70 | 2.65 | 2.60 | 2.57 | 2.53 | 2.48 | 2.46 | 2.40 | 2.39 | 2.35 | 2.31 | 2.24 | 2.19 | 2.14 | 2.13 |
| | .01 | 8.86 | 6.51 | 5.56 | 5.04 | 4.69 | 4.46 | 4.28 | 4.14 | 4.03 | 3.94 | 3.86 | 3.80 | 3.70 | 3.66 | 3.53 | 3.51 | 3.43 | 3.35 | 3.22 | 3.11 | 3.03 | 3.00 |
| | .10 | 3.07 | 2.70 | 2.49 | 2.36 | 2.27 | 2.21 | 2.16 | 2.12 | 2.09 | 2.06 | 2.04 | 2.02 | 1.98 | 1.97 | 1.93 | 1.92 | 1.90 | 1.87 | 1.83 | 1.79 | 1.76 | 1.76 |
| 15 | 0.5 | 4.54 | 3.68 | 3.29 | 3.06 | 2.90 | 2.79 | 2.71 | 2.64 | 2.59 | 2.54 | 2.51 | 2.48 | 2.42 | 2.40 | 2.34 | 2.33 | 2.29 | 2.25 | 2.18 | 2.12 | 2.08 | 2.07 |
| | .01 | 8.68 | 6.36 | 5.42 | 4.89 | 4.56 | 4.32 | 4.14 | 4.00 | 3.89 | 3.80 | 3.73 | 3.67 | 3.56 | 3.52 | 3.40 | 3.37 | 3.29 | 3.21 | 3.08 | 2.98 | 2.89 | 2.87 |
| | .10 | 3.05 | 2.67 | 2.46 | 2.33 | 2.24 | 2.18 | 2.13 | 2.09 | 2.06 | 2.03 | 2.01 | 1.99 | 1.95 | 1.94 | 1.90 | 1.89 | 1.87 | 1.84 | 1.79 | 1.76 | 1.73 | 1.72 |
| 16 | .05 | 4.49 | 3.63 | 3.24 | 3.01 | 2.85 | 2.74 | 2.66 | 2.59 | 2.54 | 2.49 | 2.46 | 2.42 | 2.37 | 2.35 | 2.29 | 2.28 | 2.24 | 2.19 | 2.12 | 2.07 | 2.02 | 2.01 |
| | .01 | 8.53 | 6.23 | 5.29 | 4.77 | 4.44 | 4.20 | 4.03 | 3.89 | 3.78 | 3.69 | 3.62 | 3.55 | 3.45 | 3.41 | 3.28 | 3.26 | 3.18 | 3.10 | 2.97 | 2.86 | 2.78 | 2.75 |

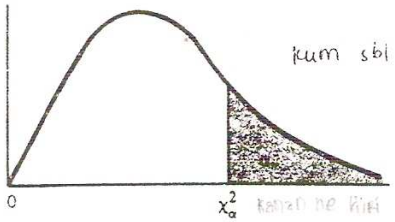
## Table B-6 The $F$ distribution ($\alpha = 0.10, 0.05$, and $0.01$)

| | | $\nu_1$ (numerator) | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $\nu_2$ | $\alpha$ | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 14 | 15 | 19 | 20 | 24 | 30 | 50 | 100 | 500 | $\infty$ |
| 18 | .10 | 3.01 | 2.62 | 2.42 | 2.29 | 2.20 | 2.13 | 2.08 | 2.04 | 2.00 | 1.98 | 1.96 | 1.93 | 1.90 | 1.89 | 1.85 | 1.84 | 1.81 | 1.78 | 1.74 | 1.70 | 1.67 | 1.66 |
| | .05 | 4.41 | 3.55 | 3.16 | 2.93 | 2.77 | 2.66 | 2.58 | 2.51 | 2.46 | 2.41 | 2.37 | 2.34 | 2.29 | 2.27 | 2.20 | 2.19 | 2.15 | 2.11 | 2.04 | 1.98 | 1.93 | 1.92 |
| | .01 | 8.29 | 6.01 | 5.09 | 4.58 | 4.25 | 4.01 | 3.84 | 3.71 | 3.60 | 3.51 | 3.43 | 3.37 | 3.27 | 3.23 | 3.10 | 3.08 | 3.00 | 2.92 | 2.78 | 2.68 | 2.59 | 2.57 |
| 19 | .10 | 2.99 | 2.61 | 2.40 | 2.27 | 2.18 | 2.11 | 2.06 | 2.02 | 1.98 | 1.96 | 1.94 | 1.91 | 1.87 | 1.86 | 1.82 | 1.81 | 1.79 | 1.76 | 1.71 | 1.67 | 1.64 | 1.63 |
| | .05 | 4.38 | 3.52 | 3.13 | 2.90 | 2.74 | 2.63 | 2.54 | 2.48 | 2.42 | 2.38 | 2.34 | 2.31 | 2.26 | 2.23 | 2.17 | 2.16 | 2.11 | 2.07 | 2.00 | 1.94 | 1.89 | 1.88 |
| | .01 | 8.18 | 5.93 | 5.01 | 4.50 | 4.17 | 3.94 | 3.77 | 3.63 | 3.52 | 3.43 | 3.36 | 3.30 | 3.19 | 3.15 | 3.03 | 3.00 | 2.92 | 2.84 | 2.71 | 2.60 | 2.51 | 2.49 |
| 20 | .10 | 2.97 | 2.59 | 2.38 | 2.25 | 2.16 | 2.09 | 2.04 | 2.00 | 1.95 | 1.94 | 1.92 | 1.89 | 1.85 | 1.84 | 1.80 | 1.79 | 1.77 | 1.74 | 1.69 | 1.65 | 1.62 | 1.61 |
| | .05 | 4.35 | 3.49 | 3.10 | 2.87 | 2.71 | 2.60 | 2.51 | 2.45 | 2.39 | 2.35 | 2.31 | 2.28 | 2.22 | 2.20 | 2.14 | 2.12 | 2.08 | 2.04 | 1.97 | 1.91 | 1.86 | 1.84 |
| | .01 | 8.10 | 5.85 | 4.94 | 4.43 | 4.10 | 3.87 | 3.70 | 3.56 | 3.46 | 3.37 | 3.29 | 3.23 | 3.13 | 3.09 | 2.96 | 2.94 | 2.86 | 2.78 | 2.64 | 2.54 | 2.44 | 2.42 |
| 24 | .10 | 2.93 | 2.54 | 2.33 | 2.19 | 2.10 | 2.04 | 1.98 | 1.94 | 1.91 | 1.88 | 1.85 | 1.83 | 1.79 | 1.78 | 1.74 | 1.73 | 1.70 | 1.67 | 1.62 | 1.58 | 1.54 | 1.53 |
| | .05 | 4.26 | 3.40 | 3.01 | 2.78 | 2.62 | 2.51 | 2.42 | 2.36 | 2.30 | 2.25 | 2.21 | 2.18 | 2.13 | 2.11 | 2.04 | 2.03 | 1.98 | 1.94 | 1.86 | 1.80 | 1.75 | 1.73 |
| | .01 | 7.82 | 5.61 | 4.72 | 4.22 | 3.90 | 3.67 | 3.50 | 3.36 | 3.26 | 3.17 | 3.09 | 3.03 | 2.93 | 2.89 | 2.76 | 2.74 | 2.66 | 2.58 | 2.44 | 2.33 | 2.24 | 2.21 |
| 30 | .10 | 2.88 | 2.49 | 2.28 | 2.14 | 2.05 | 1.98 | 1.93 | 1.88 | 1.85 | 1.82 | 1.79 | 1.77 | 1.73 | 1.72 | 1.68 | 1.67 | 1.64 | 1.61 | 1.55 | 1.51 | 1.47 | 1.46 |
| | .05 | 4.17 | 3.32 | 2.92 | 2.69 | 2.53 | 2.42 | 2.33 | 2.27 | 2.21 | 2.16 | 2.13 | 2.09 | 2.04 | 2.01 | 1.95 | 1.93 | 1.89 | 1.84 | 1.76 | 1.70 | 1.64 | 1.62 |
| | .01 | 7.56 | 5.39 | 4.51 | 4.02 | 3.70 | 3.47 | 3.30 | 3.17 | 3.07 | 2.98 | 2.91 | 2.84 | 2.74 | 2.70 | 2.57 | 2.55 | 2.47 | 2.39 | 2.25 | 2.13 | 2.03 | 2.01 |
| 50 | .10 | 2.81 | 2.41 | 2.20 | 2.06 | 1.97 | 1.90 | 1.84 | 1.80 | 1.76 | 1.73 | 1.70 | 1.68 | 1.64 | 1.63 | 1.58 | 1.57 | 1.54 | 1.50 | 1.44 | 1.39 | 1.34 | 1.33 |
| | .05 | 4.03 | 3.18 | 2.79 | 2.56 | 2.40 | 2.29 | 2.20 | 2.13 | 2.07 | 2.03 | 1.99 | 1.95 | 1.89 | 1.87 | 1.80 | 1.78 | 1.74 | 1.69 | 1.60 | 1.52 | 1.46 | 1.44 |
| | .01 | 7.17 | 5.06 | 4.20 | 3.72 | 3.41 | 3.19 | 3.02 | 2.89 | 2.79 | 2.70 | 2.63 | 2.56 | 2.46 | 2.42 | 2.29 | 2.27 | 2.18 | 2.10 | 1.95 | 1.82 | 1.71 | 1.68 |
| 100 | .10 | 2.76 | 2.36 | 2.14 | 2.00 | 1.91 | 1.83 | 1.78 | 1.73 | 1.70 | 1.66 | 1.63 | 1.61 | 1.57 | 1.56 | 1.50 | 1.49 | 1.46 | 1.42 | 1.35 | 1.29 | 1.23 | 1.21 |
| | .05 | 3.94 | 3.09 | 2.70 | 2.46 | 2.31 | 2.19 | 2.10 | 2.03 | 1.97 | 1.93 | 1.89 | 1.85 | 1.79 | 1.77 | 1.69 | 1.68 | 1.63 | 1.57 | 1.48 | 1.39 | 1.31 | 1.28 |
| | .01 | 6.90 | 4.82 | 3.98 | 3.51 | 3.21 | 2.99 | 2.82 | 2.69 | 2.59 | 2.50 | 2.43 | 2.37 | 2.26 | 2.22 | 2.09 | 2.07 | 1.98 | 1.89 | 1.73 | 1.60 | 1.47 | 1.43 |
| 500 | .10 | 2.72 | 2.31 | 2.10 | 1.96 | 1.86 | 1.79 | 1.73 | 1.68 | 1.64 | 1.61 | 1.58 | 1.56 | 1.52 | 1.50 | 1.45 | 1.44 | 1.41 | 1.36 | 1.28 | 1.21 | 1.12 | 1.09 |
| | .05 | 3.86 | 3.01 | 2.62 | 2.39 | 2.23 | 2.12 | 2.03 | 1.96 | 1.90 | 1.85 | 1.81 | 1.77 | 1.71 | 1.69 | 1.61 | 1.59 | 1.54 | 1.48 | 1.38 | 1.28 | 1.16 | 1.11 |
| | .01 | 6.69 | 4.65 | 3.82 | 3.36 | 3.05 | 2.84 | 2.68 | 2.55 | 2.44 | 2.36 | 2.28 | 2.22 | 2.12 | 2.07 | 1.94 | 1.92 | 1.83 | 1.74 | 1.56 | 1.41 | 1.23 | 1.16 |
| $\infty$ | .10 | 2.71 | 2.30 | 2.08 | 1.94 | 1.85 | 1.77 | 1.72 | 1.67 | 1.63 | 1.60 | 1.57 | 1.55 | 1.51 | 1.49 | 1.43 | 1.42 | 1.38 | 1.34 | 1.26 | 1.18 | 1.08 | 1.00 |
| | .05 | 3.84 | 3.00 | 2.60 | 2.37 | 2.21 | 2.10 | 2.01 | 1.94 | 1.88 | 1.83 | 1.79 | 1.75 | 1.69 | 1.67 | 1.59 | 1.57 | 1.52 | 1.46 | 1.35 | 1.24 | 1.11 | 1.00 |
| | .01 | 6.63 | 4.61 | 3.78 | 3.32 | 3.02 | 2.80 | 2.64 | 2.51 | 2.41 | 2.32 | 2.25 | 2.18 | 2.08 | 2.04 | 1.90 | 1.88 | 1.79 | 1.70 | 1.52 | 1.36 | 1.15 | 1.00 |

- **Uji $\chi^2$**

**TABEL A.6***

Nilai Kritik Sebaran Khi-Kuadrat



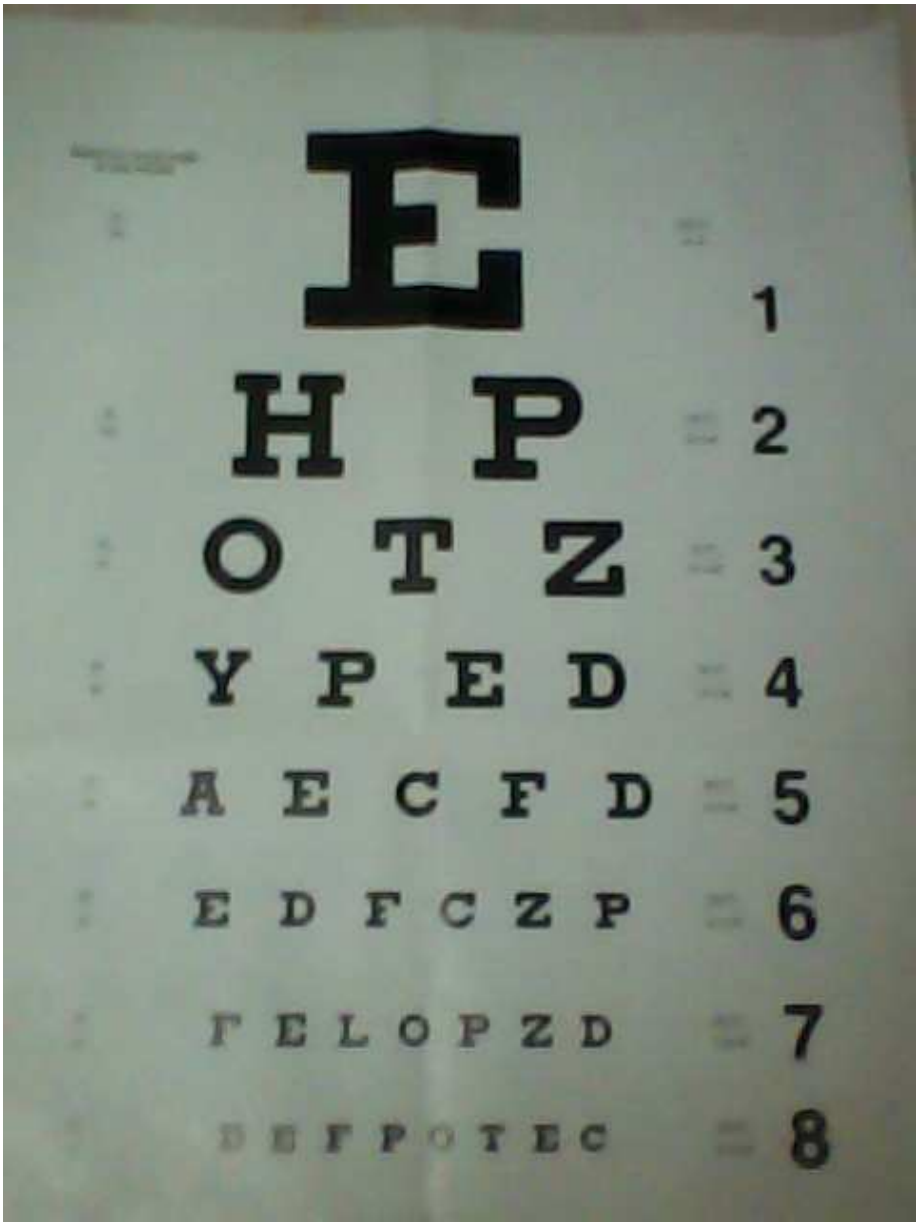

| $\nu$ | $\alpha$ | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 0.995 | 0.99 | 0.975 | 0.95 | 0.05 | 0.025 | 0.01 | 0.005 |
| 1 | $0.0^4393$ | $0.0^3157$ | $0.0^3982$ | $0.0^2393$ | 3.841 | 5.024 | 6.635 | 7.879 |
| 2 | 0.0100 | 0.0201 | 0.0506 | 0.103 | 5.991 | 7.378 | 9.210 | 10.597 |
| 3 | 0.0717 | 0.115 | 0.216 | 0.352 | 7.815 | 9.348 | 11.345 | 12.838 |
| 4 | 0.207 | 0.297 | 0.484 | 0.711 | 9.488 | 11.143 | 13.277 | 14.860 |
| 5 | 0.412 | 0.554 | 0.831 | 1.145 | 11.070 | 12.832 | 15.086 | 16.750 |
| 6 | 0.676 | 0.872 | 1.237 | 1.635 | 12.592 | 14.449 | 16.812 | 18.548 |
| 7 | 0.989 | 1.239 | 1.690 | 2.167 | 14.067 | 16.013 | 18.475 | 20.278 |
| 8 | 1.344 | 1.646 | 2.180 | 2.733 | 15.507 | 17.535 | 20.090 | 21.955 |
| 9 | 1.735 | 2.088 | 2.700 | 3.325 | 16.919 | 19.023 | 21.666 | 23.589 |
| 10 | 2.156 | 2.558 | 3.247 | 3.940 | 18.307 | 20.483 | 23.209 | 25.188 |
| 11 | 2.603 | 3.053 | 3.816 | 4.575 | 19.675 | 21.920 | 24.725 | 26.757 |
| 12 | 3.074 | 3.571 | 4.404 | 5.226 | 21.026 | 23.337 | 26.217 | 28.300 |
| 13 | 3.565 | 4.107 | 5.009 | 5.892 | 22.362 | 24.736 | 27.688 | 29.819 |
| 14 | 4.075 | 4.660 | 5.629 | 6.571 | 23.685 | 26.119 | 29.141 | 31.319 |
| 15 | 4.601 | 5.229 | 6.262 | 7.261 | 24.996 | 27.488 | 30.578 | 32.801 |
| 16 | 5.142 | 5.812 | 6.908 | 7.962 | 26.296 | 28.845 | 32.000 | 34.267 |
| 17 | 5.697 | 6.408 | 7.564 | 8.672 | 27.587 | 30.191 | 33.409 | 35.718 |
| 18 | 6.265 | 7.015 | 8.231 | 9.390 | 28.869 | 31.526 | 34.805 | 37.156 |
| 19 | 6.844 | 7.633 | 8.907 | 10.117 | 30.144 | 32.852 | 36.191 | 38.582 |
| 20 | 7.434 | 8.260 | 9.591 | 10.851 | 31.410 | 34.170 | 37.566 | 39.997 |
| 21 | 8.034 | 8.897 | 10.283 | 11.591 | 32.671 | 35.479 | 38.932 | 41.401 |
| 22 | 8.643 | 9.542 | 10.982 | 12.338 | 33.924 | 36.781 | 40.289 | 42.796 |
| 23 | 9.260 | 10.196 | 11.689 | 13.091 | 35.172 | 38.076 | 41.638 | 44.181 |
| 24 | 9.886 | 10.856 | 12.401 | 13.848 | 36.415 | 39.364 | 42.980 | 45.558 |
| 25 | 10.520 | 11.524 | 13.120 | 14.611 | 37.652 | 40.646 | 44.314 | 46.928 |
| 26 | 11.160 | 12.198 | 13.844 | 15.379 | 38.885 | 41.923 | 45.642 | 48.290 |
| 27 | 11.808 | 12.879 | 14.573 | 16.151 | 40.113 | 43.194 | 46.963 | 49.645 |
| 28 | 12.461 | 13.565 | 15.308 | 16.928 | 41.337 | 44.461 | 48.278 | 50.993 |
| 29 | 13.121 | 14.256 | 16.047 | 17.708 | 42.557 | 45.722 | 49.588 | 52.336 |
| 30 | 13.787 | 14.953 | 16.791 | 18.493 | 43.773 | 46.979 | 50.892 | 53.672 |

*Diringkas dari Tabel 8 *Biometrika Tables for Statisticians*, Vol. I, dengan izin dari E. S. Pearson dan Biometrika Trustees.

# LAMPIRAN 4

- **Alat Peraga Kartu *Snellen***
- **Alat Peraga Huruf Sambung**

- Contoh Alat Peraga Kartu *Snellen* yang diperkecil



- Contoh Alat Peraga Huruf Sambung yang diperkecil

1 Efektif

2 Efektif

3 Efektif

4 Efektif

5 Efektif

6 Efektif

7 Efektif

8 Efektif

1 Teknik

2 Teknik

3 Teknik

4 Teknik

5 Teknik

6 Teknik

7 Teknik

8 Teknik

1 Industri

2 Industri

3 Industri

4 Industri

5 Industri

6 Industri

7 Industri

8 Industri

# KOMENTAR DOSEN PENGUJI

Nama Mahasiswa : Fera Purnama Sari Gunawan

NRP : 0623019

Judul Tugas Akhir : Usulan Ukuran Huruf dan Warna Huruf Pada Penulisan di *Whiteboard* dalam Upaya Meningkatkan Efektivitas Penglihatan dari Mahasiswa Pada Saat Belajar di Kelas; Dilihat dari Aspek Ergonomi (Studi Kasus di Universitas X)

Komentar-komentar Dosen Penguji :

1. Masih terdapat Salah Pengetikan.
2. Perbaiki *flowchart* di bab 3 dan tambahkan keterangannya.
3. Perbaiki urutan daftar pustaka.

# DATA PENULIS


| | | |
|---|---|---|
| Nama | : | Fera Purnama Sari Gunawan |
| Alamat di Bandung | : | Jl. Babakan Jeruk Indah II no. 3 Bandung |
| Alamat Asal | : | Jl. P. Diponegoro no. 120 Kutoarjo |
| No. Telepon Asal | : | 0275-641070 |
| No. Handphone | : | 081 7923 1052 |
| Alamat email | : | fe_chaby@yahoo.com<br>fe_chaby@hotmail.com |
| Pendidikan | : | SMU Stella Duce 1 Yogyakarta<br>Jurusan Teknik Industri Universitas Kristen Maranatha Bandung |
| Nilai Tugas Akhir | : | A |
| Tanggal USTA | : | 1 Februari 2010 |