

Tugas 2 - Statistika

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Tentukan mean, median, dan modus dari data berikut ini.

x	f
5 – 9	4
10 – 14	9
15 – 19	16
20 – 24	12
25 – 29	6
30 – 34	3

A. Mean

x	f	x_i	$X_i.f$
5 – 9	4	7	28
10 – 14	9	12	108
15 – 19	16	17	272
20 – 24	12	22	264
25 – 29	6	27	162
30 – 34	3	32	96
Total			930

$$\begin{aligned}
 \text{Mean} &= \frac{\sum x_i \cdot f_i}{\sum f_i} \\
 &= \frac{930}{50} \\
 &= 18,6
 \end{aligned}$$

B. Median

x	f	f_k
5 – 9	4	4
10 – 14	9	13
15 – 19	16	29
20 – 24	12	41
25 – 29	6	47
30 – 34	3	50

$$n = 50$$

$$Tb = 15 - 0,5 = 14,5$$

$$f_i = 16$$

$$f_k = 13$$

$$l = 5$$

$$\begin{aligned}
 \text{Median} &= Tb + l \left(\frac{\frac{1}{2}n - f_k}{f_i} \right) \\
 &= 14,5 + 5 \left(\frac{25 - 13}{16} \right) \\
 &= 14,5 + 5 \left(\frac{12}{16} \right) \\
 &= 14,5 + 5 \left(\frac{3}{4} \right) \\
 &= 14,5 + 3,75 \\
 &= 18,25
 \end{aligned}$$

C. Modus

x	f
5 – 9	4
10 – 14	9
15 – 19	16
20 – 24	12
25 – 29	6
30 – 34	3

$$b = 15 - 0.5 = 14.5$$

$$b_1 = 16 - 9 = 7$$

$$b_2 = 16 - 12 = 4$$

$$p = 5$$

$$\begin{aligned} Mo &= b + \left(\frac{b_1}{b_1 + b_2} \right) p \\ &= 14,5 + \left(\frac{7}{7+4} \right) 5 \\ &= 14,5 + \left(\frac{7}{11} \right) 5 \\ &= 14,5 + 3,18 \\ &= 17,68 \end{aligned}$$