



Contoh

Tentukan jangkauan antar kuartil dan simpangan kuartil dari data berikut!

1. 6, 4, 7, 10, 13, 18, 7, 12

2.

Berat Badan (Kg)	Frekuensi
40 – 49	5
50 – 59	14
60 – 69	16
70 – 79	12
80 – 89	3
Total	50

Materi Ajar

Latihan Soal

Sumber



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Contoh

6, 4, 7, 10, 13, 18, 7, 12

Data terurut:

4 6 7 7 10 12 13 18

Q_1 Q_2 Q_3

$$Q_1 = \frac{1}{2}(6 + 7) = 6,5$$

$$Q_3 = \frac{1}{2}(12 + 13) = 12,5$$

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Sumber

Contoh

Maka,

$$H = Q_3 - Q_1 = 12,5 - 6,5 = 6$$

$$Q_d = \frac{1}{2} H = \frac{1}{2} (6) = 3$$

Jadi, data tersebut mempunyai jangkauan antar kuartil 6 dan simpangan kuartil 3.



Contoh

$$\text{Letak } Q_1 = \frac{1}{4} \cdot N = \frac{1}{4} \cdot 50 = 12,5$$

Berat Badan (Kg)	f	f_{kk}
40 – 49	5	5
50 – 59	14	19
60 – 69	16	35
70 – 79	12	47
80 – 89	3	50
Total	50	

← Q_1

$$\begin{aligned} Q_1 &= T_b + \left(\frac{\frac{1}{4}N - f_{kk}}{f} \right) \cdot p \\ &= 49,5 + \left(\frac{12,5 - 5}{14} \right) \cdot 10 \\ &= 54,86 \end{aligned}$$

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Contoh

$$\text{Letak } Q_3 = \frac{3}{4} \cdot N = \frac{3}{4} \cdot 50 = 37,5$$

Berat Badan (Kg)	f	f_{kk}
40 – 49	5	5
50 – 59	14	19
60 – 69	16	35
70 – 79	12	47
80 – 89	3	50
Total	50	

← Q_3

$$\begin{aligned} Q_3 &= T_b + \left(\frac{\frac{3}{4}N - f_{kk}}{f} \right) \cdot p \\ &= 69,5 + \left(\frac{37,5 - 35}{12} \right) \cdot 10 \\ &= 71,58 \end{aligned}$$

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Contoh

Maka,

$$\begin{aligned} H &= Q_3 - Q_1 \\ &= 71,58 - 54,86 \\ &= 16,72 \end{aligned}$$

$$Q_d = \frac{1}{2} H = \frac{1}{2} (16,72) = 8,36$$

Jadi, jangkauan antar kuartil data tersebut adalah 16,72 dan simpangan kuartil 8,36.



Jangkauan Persentil

Ex:

Tentukan jangkauan persentil dari data berikut!

Berat Badan (Kg)	Frekuensi
40 – 49	5
50 – 59	14
60 – 69	16
70 – 79	12
80 – 89	3
Total	50

Materi Ajar

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Jangkauan Persentil

$$\text{Letak } P_{10} = \frac{10}{100} \cdot N = \frac{10}{100} \cdot 50 = 5$$

Berat Badan (Kg)	f	f_{kk}
40 – 49	5	5
50 – 59	14	19
60 – 69	16	35
70 – 79	12	47
80 – 89	3	50
Total	50	

← P_{10}

$$\begin{aligned} P_{10} &= T_b + \left(\frac{\frac{10}{100} N - f_{kk}}{f} \right) \cdot p \\ &= 39,5 + \left(\frac{5 - 0}{5} \right) \cdot 10 \\ &= 49,5 \end{aligned}$$

Materi Ajar

Latihan Soal

Sumber





Jangkauan Persentil

$$\text{Letak } P_{90} = \frac{90}{100} \cdot N = \frac{90}{100} \cdot 50 = 45$$

Berat Badan (Kg)	f	f_{kk}
40 – 49	5	5
50 – 59	14	19
60 – 69	16	35
70 – 79	12	47
80 – 89	3	50
Total	50	

← P_{90}

$$\begin{aligned} P_{90} &= T_b + \left(\frac{\frac{90}{100} N - f_{kk}}{f} \right) \cdot p \\ &= 69,5 + \left(\frac{45 - 35}{12} \right) \cdot 10 \\ &= 77,83 \end{aligned}$$



Materi Ajar

Latihan Soal

Sumber



Jangkauan Persentil

Maka,

$$\begin{aligned} JP &= P_{90} - P_{10} \\ &= 77,83 - 49,5 \\ &= 28,33 \end{aligned}$$

Jadi, jangkauan persentil data tersebut adalah 28,33.

Materi Ajar

Latihan Soal

Sumber

