

Build Tasks — Answers



1. Q_1, Q_2, Q_3 , IQR for: 8, 10, 13, 15, 18, 21, 24.

Solution

$$Q_2 = 15; Q_1 = 10, Q_3 = 21$$
$$\text{IQR} = 21 - 10 = 11$$

2. Q_1, Q_2, Q_3 , IQR for: 5, 7, 9, 12, 14, 16, 19, 22.

Solution

$$Q_2 = 13; Q_1 = 8$$
$$Q_3 = (16 + 19)/2 = 17.5$$
$$\text{IQR} = 17.5 - 8 = 9.5$$

3. Q_1, Q_2, Q_3 , IQR for: 12, 14, 17, 19, 21, 24, 27, 30, 32.

Solution

$$Q_2 = 21$$
$$Q_1 = (14 + 17)/2 = 15.5$$
$$Q_3 = (27 + 30)/2 = 28.5$$
$$\text{IQR} = 13$$

4. Q_1, Q_2, Q_3 , IQR for: 6, 9, 11, 14, 18, 20, 23, 27.

Solution

$$Q_2 = (14 + 18)/2 = 16$$
$$Q_1 = 10, Q_3 = 21.5$$
$$\text{IQR} = 21.5 - 10 = 11.5$$

5. Q_1, Q_2, Q_3 , IQR for: 4, 8, 10, 13, 17, 19, 21, 25.

Solution

$$Q_2 = 15; Q_1 = 9, Q_3 = 20$$
$$\text{IQR} = 20 - 9 = 11$$

6. Q_1, Q_2, Q_3 , IQR for: 9, 12, 14, 16, 18, 20, 24, 28.

Solution

$$Q_2 = 17; Q_1 = 13, Q_3 = 22$$
$$\text{IQR} = 22 - 13 = 9$$

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7. Box: min 3, $Q_1 = 9$, med 12, $Q_3 = 18$, max 25. Find the IQR.

Solution

$$\begin{aligned}\text{IQR} &= Q_3 - Q_1 \\ &= 18 - 9 = 9\end{aligned}$$

8. Box: min 10, $Q_1 = 16$, med 20, $Q_3 = 29$, max 35. IQR and range.

Solution

$$\begin{aligned}\text{IQR} &= 29 - 16 = 13 \\ \text{Range} &= 35 - 10 = 25\end{aligned}$$

9. Larger IQR? A: $Q_1 = 12$, $Q_3 = 20$. B: $Q_1 = 15$, $Q_3 = 28$.

Solution

A: IQR = 8
B: IQR = 13
B is larger.

10. One quarter of the data lies below 18. Which quartile is 18?

Solution

18 is Q_1
(lowest 25% below it).

11. Three quarters lies below 42. Which quartile is 42?

Solution

42 is Q_3
(75% below it).

12. $Q_1 = 9$, $Q_3 = 18$. Interval for the middle half?

Solution

Middle half lies in
9 to 18.

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13. $Q_1 = 16$, $Q_3 = 29$. Interval for the middle half?

Solution

Middle half lies in
16 to 29.

14. Five-number summary: 4, 10, 13, 17, 24. Find the IQR.

Solution

$Q_1 = 10$, $Q_3 = 17$
 $IQR = 17 - 10 = 7$

15. Five-number summary: 12, 15, 19, 26, 31. IQR and range.

Solution

$Q_1 = 15$, $Q_3 = 26$
 $IQR = 26 - 15 = 11$
 $Range = 31 - 12 = 19$

16. More consistent (smaller IQR)? A: IQR 6. B: IQR 12.

Solution

Set A (IQR 6)
— smaller spread.