Guide to: Box plots

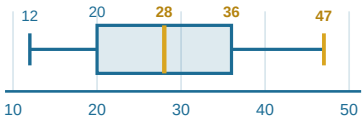
maths Links

Explanation:

A box plot displays 5 key values: **Minimum** (left whisker), **Lower Quartile (LQ)** (left of box), **Median** (line inside box), **Upper Quartile (UQ)** (right of box), and **Maximum** (right whisker). The box width is the **IQR = UQ − LQ** (middle 50% of data).

When asked to **compare two box plots** (2 marks), always make two comparisons in context: (1) compare the **medians** (which group is higher on average), and (2) compare the **IQRs or ranges** (which group is more consistent / less spread out).

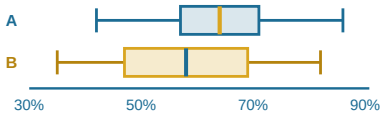
Example 1: A dataset has Minimum = **12**, LQ = **20**, Median = **28**, Range = **35**, and IQR = **16**. Find the Maximum and UQ to plot the box plot.



Solution:

Max = 12 + 35 = **47**; UQ = 20 + 16 = **36**
Answer: UQ = 36, Maximum = 47

Example 2: Class A scores: **Median = 64%, IQR = 14%**. Class B scores: **Median = 58%, IQR = 22%**. Compare the two classes.



Solution:

1. Average: Class A scored higher on average (median 64% > 58%).
2. Spread: Class A was more consistent (IQR 14% < 22%).

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