

Push Tasks Answers



1. Median: $Y (30) > X (28) > Z (22)$.
IQR: $Z (25) > X (15) > Y (13)$ — Z is most spread, Y most consistent. Z's long upper tail suggests right skew.

2. Missing spread, shape, and interesting features — a higher box only speaks to centre (median), not consistency or overall distribution shape.

3. Equal range but different IQR means similar extremes but a very different middle 50% — one distribution is far more tightly clustered around its median.

4. A whisker much longer than the box suggests a long tail or a value close to an outlier that wasn't flagged separately — worth checking as an actual outlier.

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5. Extreme values in the tail pull the mean toward them, while the median (based on position, not value) resists — the two diverge because they measure “centre” differently.

6. Two datasets can share a mean but differ completely in spread, shape, and outliers — a box plot shows all of this at once, while a mean alone hides it.

7. Several outliers on the same side suggest a genuine subgroup or pattern, since random errors are unlikely to all land on the same side.

8. Example: two classes share identical five-number summaries, but one has an extra outlier far above the maximum — the outlier reveals an exceptional case the summary alone wouldn't show.