

1. $Q1 = 20$, $Q3 = 40$. Find the IQR.

$$40 - 20$$

Answer: 20

2. Same: find $1.5 \times \text{IQR}$.

$$1.5 \times 20$$

Answer: 30

3. Same: find the lower fence $Q1 - 1.5(\text{IQR})$.

$$20 - 30$$

Answer: -10

4. Same: find the upper fence $Q3 + 1.5(\text{IQR})$.

$$40 + 30$$

Answer: 70

5. Is 75 an outlier for those fences (-10 to 70)?

$$75 > 70$$

Answer: yes

6. Is 0 an outlier for fences -10 to 70?

$$-10 \leq 0 \leq 70$$

Answer: no

7. Data 3,5,6,7,8,9,40. Which value looks like an outlier?

Far from the rest

Answer: 40

8. Which measure does an outlier affect more: mean or median?

Median resists

Answer: mean

9. A set has $Q1 = 12$, $Q3 = 20$. Compute both fences and decide if 34 is an outlier. ★ challenge

$$\text{IQR } 8; 1.5x = 12$$

$$\text{Upper fence } 32; 34 > 32$$

Answer: yes, 34 is an outlier

10. Removing the outlier 40 from 3,5,6,7,8,9,40: describe what happens to the mean vs the median. ★ challenge

Mean drops a lot; median barely moves

Answer: mean falls sharply; median about the same