Measures of S P R E A D (variation): Range & Interquartile Range (IQR)

Measures of Spread tell you how spread out your data is, or how much it varies.

Range: the difference between the **highest** and **lowest**

values in a data set (simply subtract the highest and lowest numbers!)

Maximum Value   Minimum Value

Example: 20, 13, 22, 17, (28) (10) 25   **Range →** 28 – 10 = 18

You Try: Find the range for the following data.

1) 34, 15, 9, 33, 27, 12, 27, 25, 30 _____

2) 8, 90, 5, 80, 27, 50 _____

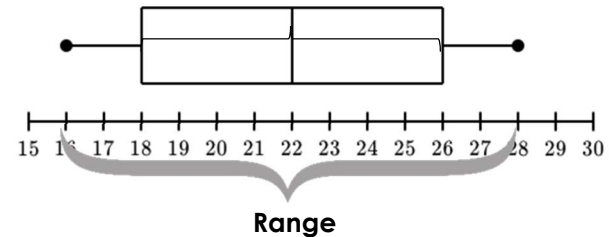3) 5, 4, 3, 5, 4, 2, 2, 6 _____

4) 35, 41, 68, 35, 83 _____

5) 5, 7, 5, 9, 6, 5, 5, 8, 4 _____

What does a LARGE range tell you about the data? _____

_____

_____

What does a SMALL range tell you about the data? _____

_____

Interquartile Range (IQR): The range between the upper and lower quartiles on a box plot. This represents the middle 50% of the data. Simply subtract the upper and lower quartiles $Q_1 - Q_3$.
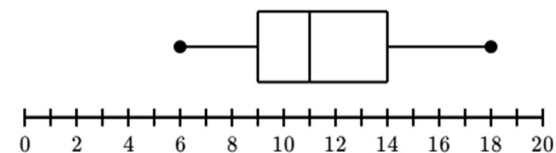
Interquartile Range (IQR)

Range

How to find the IQR:
1) Put the data in order from least to greatest.
2) Find the Median.
3) Separate the numbers below and above the median.
4) Find the medians of the lower (Q_1) and the higher (Q_3) group.
5) Subtract those two medians to get the IQR.

You Try: Based on the Box Plot above, answer the following questions.
1) What is the median? _____
2) What is Q_1? _____
3) What is Q_3? _____
4) What is the IQR? _____

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2) What is Q_1? _____
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4) What is the IQR? _____