

Stats /

Identifying the center, spread, and shape of a data set

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Our class recorded the temperature at noon each day for 41 school days in autumn. The lowest temperature (in °F) was 68, and the highest was 76. The table gives the mean, median, range, and interquartile range (IQR) of the data set.

Summary values			
Mean	Median	Range	IQR
71	70	8	3

(a) Select the best description of center for the data set.

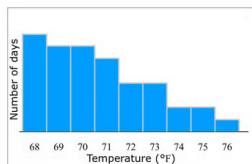
- ☐ Looking at the IQR, we see that a "typical" day had a temperature of about 3 °F.
- ☐ Looking at the range, we see that a "typical" day had a temperature of about 8 °F.
- ☒ Looking at the median and mean, we see that a "typical" day had a temperature of about 70 or 71 °F.

(b) Select the best description of spread for the data set.

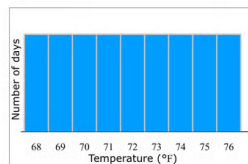
- ☐ The difference between the largest and smallest temperature (in °F) is 41. (This is the number of days the temperature was recorded.)
- ☒ The difference between the largest and smallest temperature (in °F) is 8. (This is the range.)
- ☐ The difference between the largest and smallest temperature (in °F) is 71. (This is the mean.)

(c) Select the graph with the shape that best fits the summary values.

☐ Graph 1 (The data set is *not* symmetric.)



☒ Graph 2 (The data set is *symmetric*.)



Mean = Median symmetric

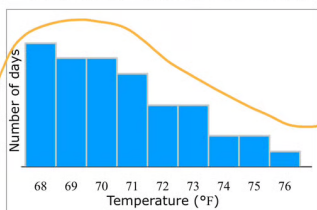


IQR
75th - 25th
 $Q_3 - Q_1$

How spread out the middle of the data is

(c) Select the graph with the shape that best fits the summary values.

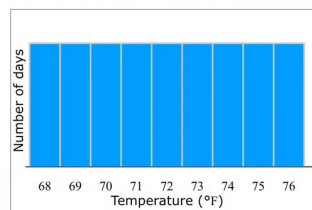
☒ Graph 1 (The data set is *not* symmetric.)



Skewed right

Mean to the right of median

☐ Graph 2 (The data set is *symmetric*.)



Mean = 71 median = 70
 $71 > 70$
Mean > Median

Identifying the center, spread, and shape of a data set

A fishing tournament was held last year at The Fishing Academy. The organizer recorded the weight of each of the 28 fish caught. The smallest weight was 15 lb, and the largest was 21 lb. The table gives the mean, median, range, and interquartile range (IQR) of the data set.

Summary values			
Mean	Median	Range	IQR
18	18	6	2

(a) Select the best description of center for the data set.

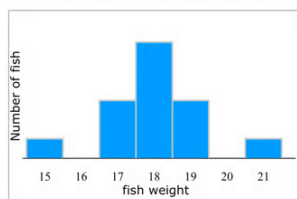
- ☐ The "average" fish (in lb) was about 2 to 6, based on the IQR and range.
- ☒ The "average" fish (in lb) was about 18, based on the mean and median.
- ☐ The "average" fish (in lb) was about 28, which is the number of fish caught.

(b) Select the best description of spread for the data set.

- ☒ We can tell by the IQR that the middle half of the data set is 2 units wide.
- ☐ We can tell by the number of fish caught that the middle half of the data set is 28 units wide.
- ☐ We can tell by the mean that the middle half of the data set is 18 units wide.

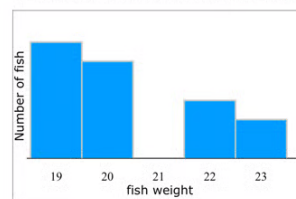
(c) Select the graph with the shape that best fits the summary values.

☒ Graph 1 (The data set is *symmetric*.)



Mean = Median
Symmetric
18 = 18

☐ Graph 2 (The data set is *not* symmetric.)



mean & Median skewed