Set E, pages 488–492

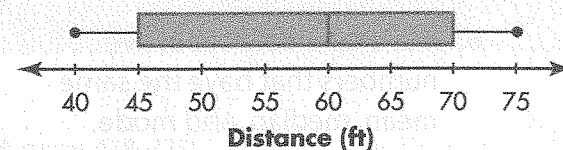At 20 mph, seven top-selling cars have stopping distances of:

60 ft, 75 ft, 45 ft, 55 ft, 70 ft, 40 ft, and 65 ft.

To find the first quartile, order the numbers from least to greatest, find the median value, and then find the median of the numbers to the left of the median. Do the same for the third quartile by finding the median of the second half of numbers.

40 ⑤ 55 ㉖ 65 ㉗ 75

1st quartile Median 3rd quartile

- The IQR = third quartile − first quartile: 70 − 45 = 25.
- Make a box plot. Show the minimum and maximum values, the median, and the first and third quartiles.

Stopping Distances of Top Selling Cars

40 45 50 55 60 65 70 75
Distance (ft)

Remember that absolute deviation is the absolute value of the difference between each data point and the mean.

For **1** through **4**, use the data below.

27, 31, 30, 33, 29, 25, 28

1. Order the original data set from least to greatest and make a box plot.

2. What is the IQR?

3. What is the mean? What is absolute deviation from the mean for each data point?

4. What is the mean absolute deviation of the data?

Set F, pages 494–496

Which measure of center and measure of variability best describe the data set?

Games Sold Each Week
81	90	85	86	82	55	90

Find the mean, median, and mode of the number of games sold each week.

Mean: 81.3, Median: 85, and Mode: 90

Since most of the data clusters between 81 and 86, the mean is the best measure of center.

- Use the interquartile range when the median is the most appropriate measure of center. The IQR for this data set is 9.

- Use the mean absolute deviation when the mean is the most appropriate measure of center. The mean absolute deviation for this data set is 7.6.

Remember to use the IQR when the median is more appropriate and the mean absolute deviation when the mean is more appropriate.

For **1** through **3**, use the data below.

Home Runs Hit
40	29	36	27
40	42	58	60

1. Find the mean, median, and mode of the number of home runs hit by 8 sluggers.

2. Which measure of center and measure of variability best describe the data set?

3. Does the data set contain any outliers? Explain.

Set G, pages 498–499

You can summarize a data set by using mean or median for a measure of center, and by using a dot or box plot to find the shape of the data.

Make a box plot to show the data distribution for the rainfall in March over seven years.

3 in., 9 in., 14 in., 17 in., 19 in., 21 in., 24 in.

Rainfall in March

0   3   6   9   12 15 18 21 24 27
Rainfall (in.)
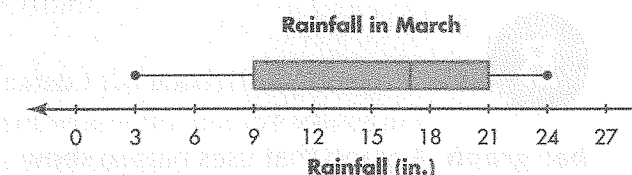
The typical rainfall in March is around 17 inches. Half of the March rainfall totals are between 9 and 21 inches.

The range of the March rainfalls is 21 inches.

Remember that you should use words and numbers that best describe the data set.

Dana listed all the fish (in inches) she caught this summer at the lake:

10 in., 12 in., 12 in., 13 in., 13 in., 14 in., 14 in., 15 in., 15 in., 16 in., 17 in., 18 in., 19 in., 20 in., 25 in.

1. Is the mean or the median more affected by the outlier, 25 inches?

2. What is the shape of the data?

3. Would a box plot or a dot plot better display this data? Draw both and compare.

4. Write two generalizations about the fish Dana caught. Use information from the plots you drew.

Set H, pages 500–501

Four people on an elevator have a mean weight of 115 pounds. No one weighs the same. What are 4 possible weights for the people?

Try: 103, 108, 114, 123

Check: $\dfrac{(103 + 108 + 114 + 123)}{4} = 112$

Revise:

Try adding 3 pounds to each weight.

4 possible weights for the people are 106, 111, 117, and 126.

$\dfrac{(106 + 111 + 117 + 126)}{4} = 115$

Remember, it may take many repetitions of Try, Check, and Revise to solve a problem.

1. Four friends drank a pitcher of lemonade. No person drank the same amount. If the mean amount the 4 friends drank is 2.5 cups, what are 4 possible amounts the four friends drank?

2. If the mode for the amount 4 friends drank is 2 cups and the mean amount is 2.5 cups, what are 4 possible amounts?