

1. A store sells eight varieties of water bottles. The prices for these eight varieties of water bottles are as follows.
\$27.99, \$13.99, \$5.99, \$11.99, \$13.99, \$12.99, \$16.99, \$25.49
 - a. Calculate the mean price of water bottle varieties at this store.
 - b. Calculate the median of the prices of water bottle varieties at this store.
 - c. Compare the mean and the median to determine the shape of the distribution.
 - d. The standard deviation of water bottle variety prices at this store is \$7.25. Interpret this value.
2. A random sample of five parents at a parent-teacher conference was asked to report how many hours they work in a typical week. The results are given.
38, 45, 60, 40, 35
 - a. Calculate the mean number of hours worked.
 - b. Calculate and interpret the standard deviation of the number of hours worked.
3. Two sets of numbers are given.
Set A: 40, 45, 50, 55, 60
Set B: 46, 48, 50, 52, 54
 - a. Compare the means of the two sets of numbers.
 - b. Compare the medians of the two sets of numbers.
 - c. Without doing any calculations, determine which set has a larger standard deviation. Explain.

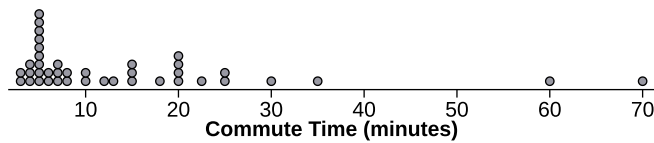
4. Consider the set of numbers given.

25, 33, 8, 18, 16

A sixth value of 20 is added to the data set. Fill in the blank with “increase”, “decrease”, or “stay the same” to indicate what will happen as a result of including this new value. Give a reason for your answer.

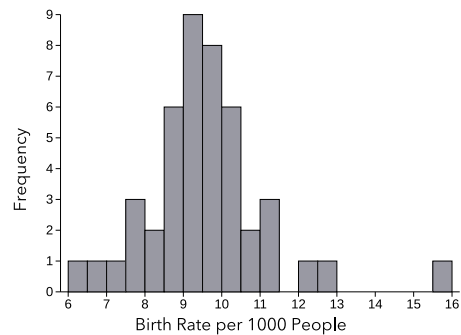
- The mean will _____.
- The median will _____.
- The range will _____.
- The standard deviation will _____.

5. Forty students were asked to report the time of their commute to school, in minutes. The data are shown in the dotplot.



- The mean commute time to school is 14.2 minutes. How does the median commute time compare to this value? Explain your reasoning.
- Which measure of center, mean or median, would best describe the typical commute time to school? Explain.
- The standard deviation of commute times for these 40 students is 14.4 minutes. Interpret this value.

6. The histogram shows the distribution of birth rates for 45 countries in Europe. The summary statistics are also shown. Describe the distribution of birth rates.



Summary Statistics

n	mean	SD	min	Q1	med	Q3	max
45	9.613	1.593	6.4	8.885	9.4	10.25	15.53

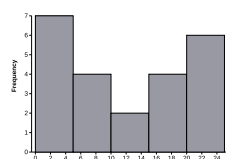
7. For the given histograms, which of the following correctly orders the standard deviations of the distributions from least to greatest?

A) C, A, B

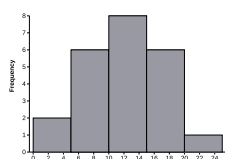
B) B, A, C

C) A, C, B

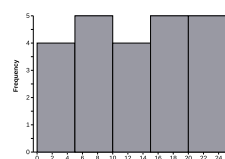
D) B, C, A



Histogram A

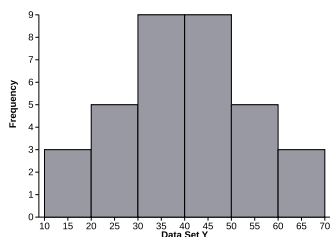
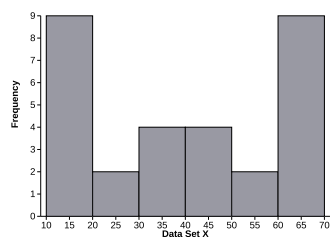


Histogram B



Histogram C

8. Data sets X and Y are shown in the histograms. Which of the following statements must be true?



A) The ranges of data set X and data set Y are equal.

B) The means of data set X and data set Y are equal.

C) The standard deviation of data set X is greater than the standard deviation of data set Y.

D) All of these must be true.