

**Algebra II - Statistics Assessment #2 REVIEW**

**Multiple Choice**

Identify the choice that best completes the statement or answers the question.

- If the range of data set A is larger than the range of data set B, then the standard deviation of set A is \_\_\_\_\_ larger than the standard deviation of set B.
  - always
  - sometimes
  - never
  - never
- In any data set, 68% of the data \_\_\_\_\_ falls within one standard deviation of the mean.
  - always
  - sometimes
  - never
  - never
- Estimate the sample size for a margin of error of  $\pm 4\%$ .
  - 50
  - 625
  - 125
  - 625
- In a poll of 123 students, 87 have never been to Disneyland. Find the margin of error.
  - $\pm 8\%$
  - $\pm 9\%$
  - $\pm 10\%$
  - $\pm 11\%$

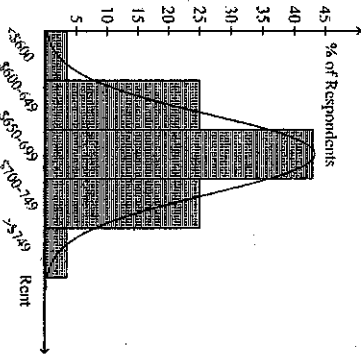
Use the information in the table below to determine which sample most likely was the greatest in size.

Sample	Standard Deviation (in.)
A	1.23
B	1.31
C	2.65
D	1.42

- Sample A
- Sample B
- Sample C
- Sample D

**Short Answer**

- Find the range and interquartile range of the data. Round to the nearest tenth.
  - 5, 12, 7, 39, 25, 5, 18, 38, 36, 53
- Find the mean and standard deviation of the of data. Round to the nearest tenth.
  - 11, 21, 12, 8, 8, 8, 11
- Another measure of variation is *variance*, which equals  $\sigma^2$ . Find the variance and standard deviation of the data set. Round to the nearest tenth.
  - 9, 5, 5, 11, 14, 14
- Susan keeps track of the number of tickets sold for each play presented at The Community Theater. Within how many standard deviations of the mean do all the values fall?
  - 95, 145, 157, 111, 68, 143, 160, 137, 163, 162, 160, 71
- A set of data has mean 53 and standard deviation 6. Find the z-score of the value 44.



- A set of data with a mean of 48 and a standard deviation of 3.1 is normally distributed. Find the values that are 1 standard deviation from the mean.
- The bar graph shows the rents paid per month for apartments in an urban neighborhood. The curve shows that the rents are normally distributed. Estimate the percent of apartment residents who pay from \$600 to \$749 per month.
- The numbers of cookies in a shipment of bags are normally distributed, with a mean of 59 and a standard deviation of 2. What percent of bags of cookies will contain between 55 and 63 cookies?
- The scores on an exam are normally distributed, with a mean of 72 and a standard deviation of 10. What percent of the scores are greater than 82?
- A grocery store will only accept yellow onions that are at least 3.25 in. in diameter. A grower has a crop of onions with diameters that are normally distributed, with a mean diameter of 3 in. and a standard deviation of 0.25 in. What percent of the onions will be accepted by the grocery store?
- Betty's Bite-Size Candies are packaged in bags. The number of candies per bag are normally distributed, with a mean of 50 candies and a standard deviation of 3. At a quality control checkpoint, a sample of bags are checked, and 4 bags contain fewer than 47 candies. How many bags were probably taken as samples?
- Sketch a normal curve with a mean of 50 and a standard deviation of 2. Label the x-axis at one, two, and three standard deviations from the mean.
- A survey of 2580 students found that 233 are left-handed. Find the sample proportion, margin of error, and use the margin of error to find an interval that is likely to contain the true population proportion.
 

Sample Population: \_\_\_\_\_

Margin of Error: \_\_\_\_\_

Interval: \_\_\_\_\_

**Essay**

19. Students from two high schools went to a band competition. Each student gave a solo performance and was rated by the judges. The possible scores ranged from 3 (one point from each judge) to 21 (seven points from each judge). The data show the scores of two groups of students.

**Westlake Student Scores:** 16, 11, 4, 18, 3, 15, 6, 21, 15, 21

**Northshore Student Scores:** 8, 14, 20, 12, 5, 8, 10, 10, 10, 12

- a. Find the mean, median, Q1, Q3, range, interquartile range, range, standard deviation and variance of the data for the Westlake High School students and for the Northshore High School students. **Show your work. You may use your calculator to check your answers.**

**WESTLAKE**

**Mean:**

**Median:**

**Q1:**

**Q3:**

**Range:**

**Interquartile Range:**

**Standard Deviation:**

**Variance:**

**NORTHSHORE**

**Mean:**

**Median:**

**Q1:**

**Q3:**

**Range:**

**Interquartile Range:**

**Standard Deviation:**

**Variance:**

- c. Use your results from parts **a** and **b** to compare the scores of the students from the two high schools. Write a sentence comparing your results!