

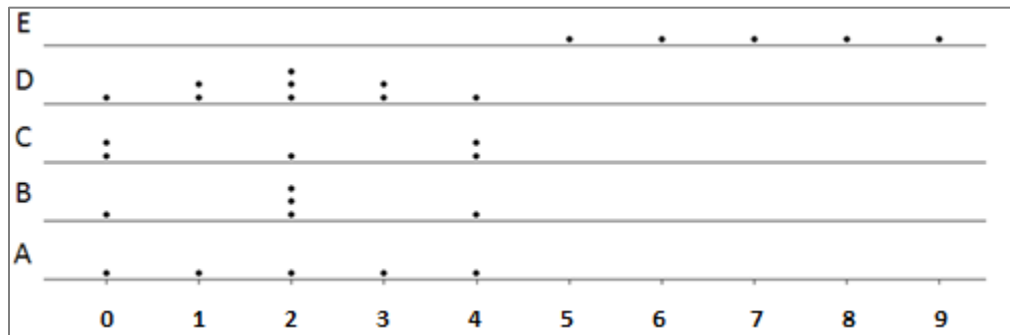
STAT 110: Practice Problem 16 Solutions

Fall 2017

1. It is possible for the standard deviation to be less than zero.

TRUE or **FALSE**

For Questions 2-4, consider the following data sets. Note that you should NOT need to use formulas to answer these questions.



2. Circle the most correct answer below.

- a. The range of data set E is the largest since it consists of the highest values.
- b. The range of all data sets is the same.
- c. The range of data set C is largest since it has two values at its minimum and two values at its maximum.
- d. None of the above is a correct statement.

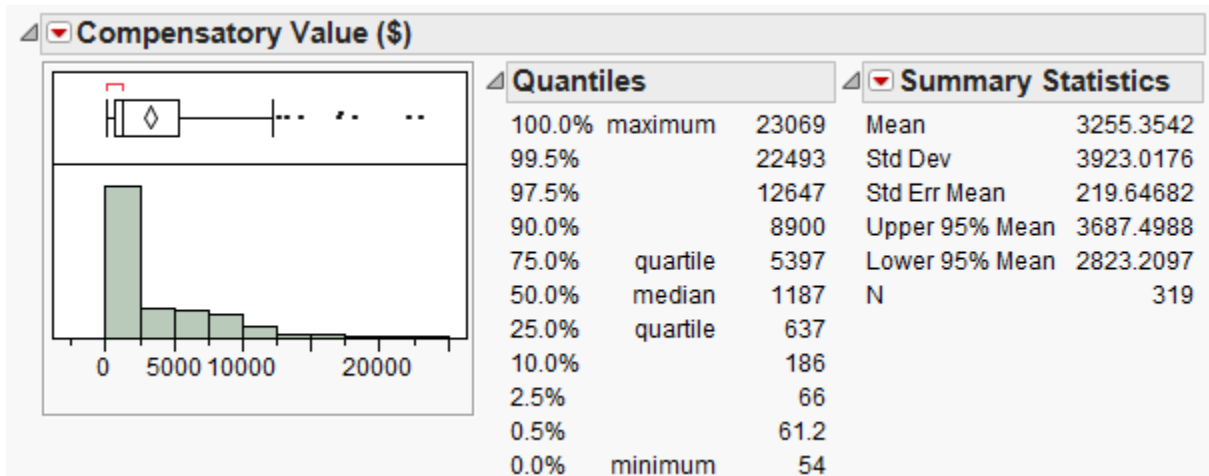
3. Circle the most correct answer below.

- a. The standard deviations of data sets B and D are the same.
- b. The standard deviations of data sets B and C are the same.
- c. The standard deviations of data sets A and E are the same.
- d. None of the above is a correct statement.

4. Circle the most correct answer below.

- a. Data set B has a larger standard deviation than Data Set A.
- b. Data set B has a larger standard deviation than Data Set C.
- c. Data set A has a larger standard deviation than Data Set C.
- d. None of the above is a correct statement.

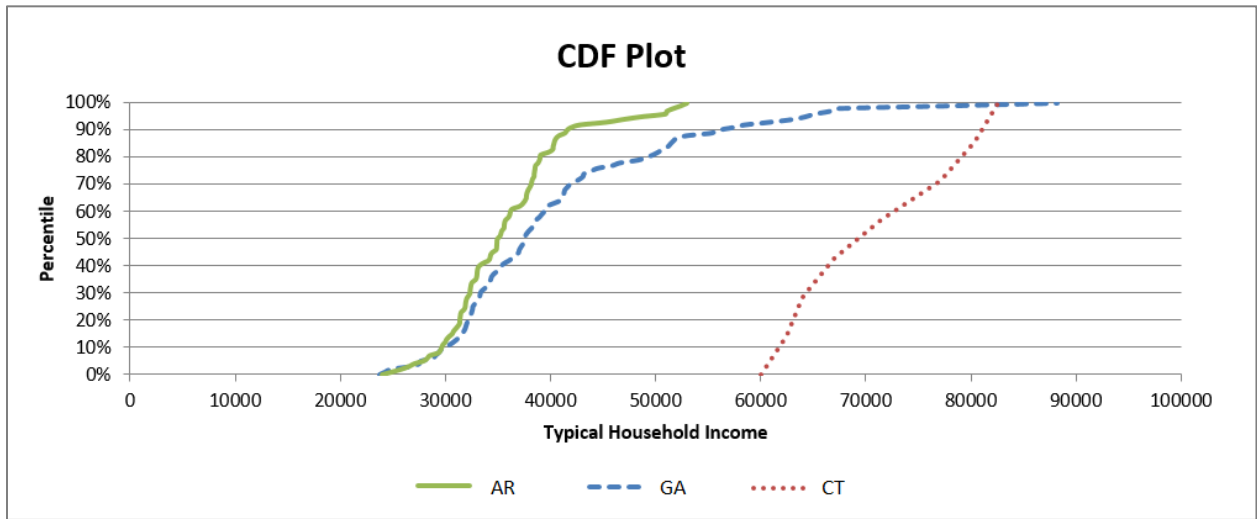
5. Suppose the average score on an exam is 78 with a standard deviation of 5. If the professor realizes that a question was unfair and decides to give every student three points back (i.e., each score is increased by 3 points), what are the new mean and standard deviation?
- mean = 78, standard deviation = 5
 - mean = 78, standard deviation = 8
 - mean = 81, standard deviation = 5
 - mean = 81, standard deviation = 8
6. Consider the following JMP output which summarizes the distribution of Compensatory Value for a random sample of trees in New York City.



Use the JMP output to fill in the boxes to correctly complete this statement.

Approximately of the trees were worth \$640 or less, and 50% of the trees were worth dollars or less. of the trees were worth more than \$8900.

7. The following graph shows the CDF plots for county-level Typical Household Incomes compared across three states: Arkansas (AR), Georgia (GA), and Connecticut (CT).



Answer the following questions based on this graph.

- a. What is the median county-level typical household income in Connecticut?

About \$70,000

- b. About 90% of the counties in Arkansas have a typical household income level at or below what dollar amount?

About \$40,000

Answer the following true/false questions based on this graph.

<p>c. Of these three states, Georgia appears to have the most amount of variability in county-level typical household incomes.</p>	<p><input checked="" type="radio"/> TRUE <input type="radio"/> FALSE</p>
<p>d. All counties in Arkansas have lower typical household incomes than all counties in Connecticut.</p>	<p><input checked="" type="radio"/> TRUE <input type="radio"/> FALSE</p>