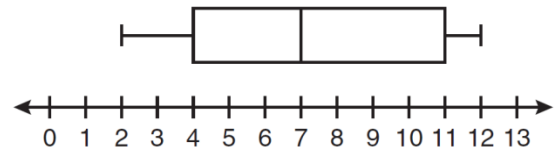


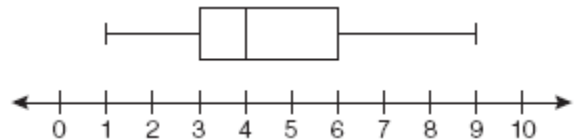
Pre-Algebra – Unit 12 Review – Probability and Statistics

1. Determine whether the sample is biased or unbiased.
 - a. You want to find out what class students in your grade like the most. You conduct a survey at one of the mathletes meetings.
 - b. You want to estimate the number of people in a town who are in favor of a new curfew law. You survey every fifth person who enters the town post office.
2. Use the box-and-whisker plot pictured to the right to complete a – e.



- a. What is the median of the data?
- b. What is the first quartile (25th percentile)?
- c. What is the third quartile (75th percentile)?
- d. Calculate the range of the data.
- e. Calculate the interquartile range (IQR).

3. The Roslyn movie theater recorded the number of tickets sold daily for a popular movie during the month of May. The box-and-whisker plot shown represents the data for the number of tickets sold, in hundreds. What conclusion can be made based on the plot?



- A. The 50th percentile is 600.
 - B. The mean number of tickets sold was 400.
 - C. The IQR is 600.
 - D. The number of tickets sold that ranged from 300 to 400 represents 25% of the data.
4. The dot plot below shows the number of pets owned by each student in a class of 24.



- a. Calculate the mean of the data. *Round to the nearest tenth.*
- b. Calculate the median of the data.
- c. Calculate the mode of the data.
- d. Which measure best represents the data set, the **mean** or **median**? Explain.

5. Calculate the mean absolute deviation for the set of data below that represents the ages of children taking a beginners gymnastics class. What does this number tell you about the variability of the data?

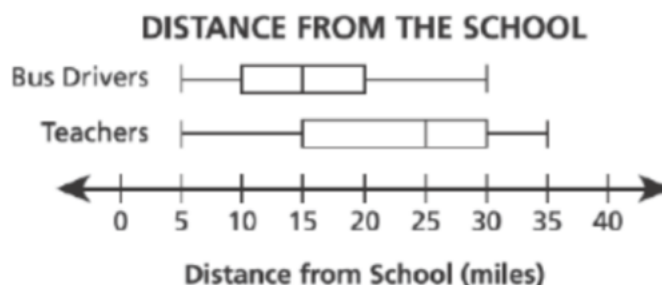
3, 3, 3, 4, 4, 4, 4, 5

6. A storeowner made a list of the number of hats he sold last month. The store sold 18 sports teams hats, 27 Under Armor hats, and 31 Nike hats. Based on these data, what is the probability that the next customer will buy a Nike hat? Round to the nearest hundredth.

- 7.) Amanda surveyed 13 students in her class about their heights in inches. The data is listed below:
52, 53, 55, 55, 56, 57, 58, 58, 59, 59, 59, 62, 65

Create a box-and-whisker plot for Amanda's data.

- 8.) A principal gathered data about the distance, in miles, that his teachers and bus drivers live from school. The box plot below shows these data.

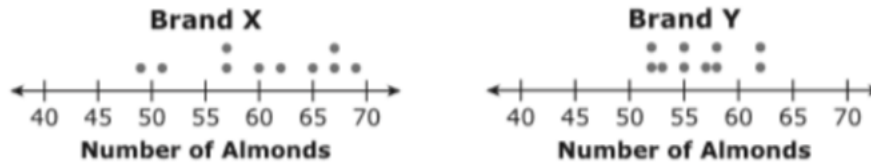


Draw a conclusion based on the double box-and-whisker plot.

9.) The English teacher wants to order books for the seventh grade classes. He wants to determine the favorite type of book among the seventh grade students. Which sample would be most appropriate for this survey?

- A.) Surveying 7 girls in each of his classes
- B.) Surveying every fifth student who walks into the cafeteria during the 7th grade lunch
- C.) Surveying 1 out of every 7 students in the middle school
- D.) surveying all the boys in his period 1 and period 2 classes

10.) Alexis chose a random sample of 10 jars of almonds from each of two different brands, X and Y. Each jar in the sample was the same size. She counted the number of almonds in each jar. Her results are shown in the plots.



Based on the plots, which statement **best** compares the number of almonds in the jars from the two brands?

- A. The number of almonds in jars from Brand X tends to be greater and more consistent than those from Brand Y.
- B. The number of almonds in jars from Brand X tends to be greater and less consistent than those from Brand Y.
- C. The number of almonds in jars from Brand X tends to be fewer and more consistent than those from Brand Y.
- D. The number of almonds in jars from Brand X tends to be fewer and less consistent than those from Brand Y.

11.) True or False: You can calculate a mean from a box-and-whisker plot.

12.) True or False: You can calculate a range from a box-and-whisker plot.

13.) True or False: You can calculate a mode from a box-and-whisker plot.

14.) True or False: You can calculate a median from a box-and-whisker plot.

15.) The following double dot plot shows the number of points scored for Daniel and Sam for the basketball games this season. Answer the following questions based on the data.

- a.) Without calculating, who has a higher mean?
- b.) Who has the higher range?
- c.) Who is the less consistent player?
- d.) Which person would have a higher M.A.D.?

