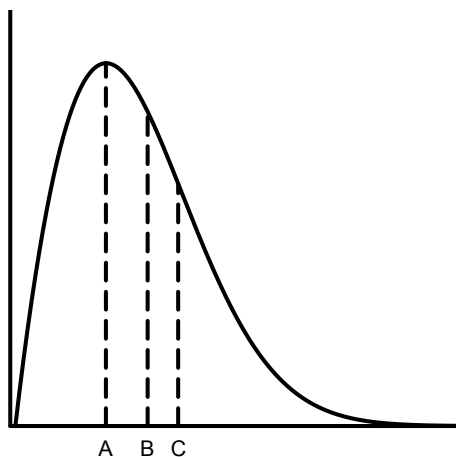


Lesson #26 · Topic 2G · Practice

Name _____

1. For each of the following scenarios, predict the shape of the density curve for the distribution (skewed left, skewed right, uniform, approximately normal). Justify your answer.
 - a. Height of adult males.
 - b. Results when asking Siri for a random number between 1 and 10.
 - c. Annual salary for a major league baseball team.
 - d. Final exam scores for a really easy class.

2. Consider the following density curve.



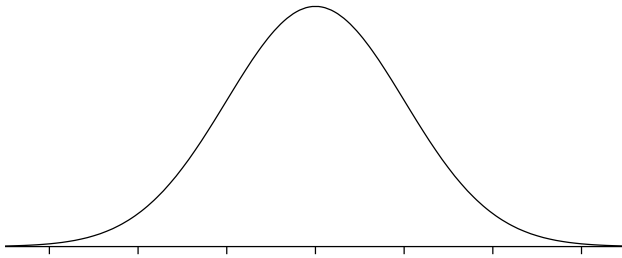
a. Which value marks the median? Explain.

b. Which value marks the mean? Explain.

3. A final exam for a college algebra class had 60 questions. For all the students that took the exam, the mean number of questions answered correctly is 54, with a standard deviation of 12. Would it be reasonable to assume that the distribution of the number of questions answered correctly is approximately normal? Explain.

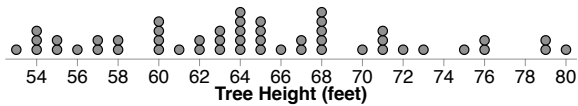
4. The website random.org has a random decimal generator that will generate a list of random numbers between 0 and 1.
 - a. What would be the shape of the density curve for the distribution of random numbers generated? Draw a picture.
 - b. What proportion of the random numbers generated would be between 0.6 and 0.8?

5. In a recent study in London, it was found the systolic blood pressure of 36-year-old females followed an approximately normal distribution with a mean of 117 mmHg and a standard deviation of 15 mmHg.



- Label the values for the mean, along with the values for 1, 2, and 3 standard deviations away from the mean.
- What percent of women in the study had a systolic blood pressure between 87 and 147 mmHg?
- What percent of women in the study had a systolic blood pressure higher than 132 mmHg?
- What percent of women in the study had a systolic blood pressure between 87 and 132 mmHg?
- How many standard deviations away from the mean is a systolic blood pressure of 135?

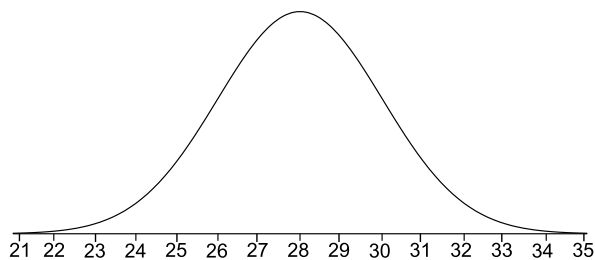
6. The Eastern White Pine tree is native to the state of Michigan. A forester in Michigan took a random sample of 50 Eastern White Pine trees and measured the height of each. The results are shown in the dotplot.



n	Mean	SD	Min	Q_1	Med	Q_3	Max
50	64.8	7	53	60	64	68	80

- a. What percent of the values are within 1 standard deviation of the mean? 2 standard deviations of the mean? 3 standard deviations of the mean?
- b. Is it reasonable to claim that the distribution of tree heights is approximately normal? Explain.

7. Which value is the best estimate for the standard deviation of the normal distribution shown in the figure?



- A) 1
- B) 2
- C) 5
- D) 12

8. The weights of male Vizslas (a dog breed) aged two years and older are approximately normally distributed. A Vizsla weighing 23.5 kilograms is at the 23rd percentile of Vizslas. Which of the following could describe the mean and standard deviation of the weights of the dogs?
- A) Mean: 29 kg Standard Deviation: 2.75 kg
 - B) Mean: 27 kg Standard Deviation: 4.75 kg
 - C) Mean: 23.5 kg Standard Deviation: 4.75 kg
 - D) Mean: 22 kg Standard Deviation: 2.75 kg
9. In 2001 in the National League of Major League Baseball, the league average for home runs hit per player was 11.98. The standard deviation of home runs hit per player was 11.7. Which of the following is most likely true about the distribution of home runs hit per player in the National League?
- A) Since the mean and standard deviation are nearly the same, the distribution of home runs hit is approximately normal.
 - B) Since the mean and standard deviation are nearly the same and the minimum number of home runs hit per player is zero, the distribution of home runs hit is skewed right.
 - C) Since some players hit more than 11.98 home runs and some players hit less than 11.98 home runs, the distribution of home runs hit must be approximately normal.
 - D) Since the standard deviation is smaller than the mean, the distribution of home runs hit is approximately normal.