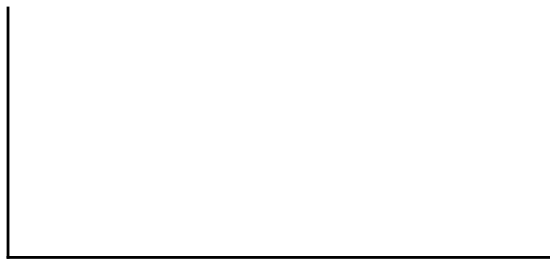


1. Determine whether each of the following describes a discrete random variable, continuous random variable, or neither.
 - a. Weight of a randomly selected monkey at a zoo
 - b. Number of car accidents on a randomly selected day
 - c. The chosen political party of a randomly selected voter
 - d. Most recent race time of a randomly selected runner

2. At the George Bush Intercontinental Airport in Houston, Texas, the Skyway Automated People-Mover is an above-ground train that shuttles travelers from one terminal to another. It departs every two minutes from the Skyway stations. Let X = time spent waiting (in seconds) for the train to depart for a randomly selected passenger. X is a uniform random variable.

- a. Use the axes to create the graph of the probability distribution of X .



Time spent waiting (seconds)

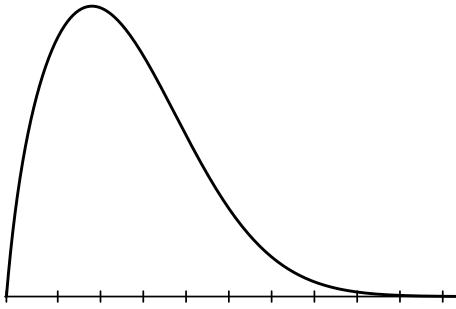
- b. Find the probability that a randomly selected passenger waits less than 45 seconds.
- c. Find $P(X > 90 \text{ seconds})$.
- d. Find $P(30 \leq X \leq 85)$.

3. An arcade game involves a player attempting to spin a wheel so that the pointer lands in the prize space when it comes to rest. There are five spaces on the wheel, including the prize space, and each has an arc length of 5 inches. The wheel has been programmed so that a spin is equally likely to land in any of the five spaces. Let D = the distance past the center of the prize space where the pointer stops after a spin. Negative values indicate that the pointer stopped before the prize space. A uniform probability distribution modeling the continuous random variable D is shown, with a constant height of h .



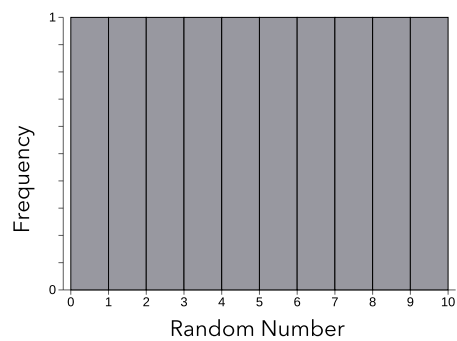
- Find the value of h .
- Find $P(D \geq 5)$.
- Find and interpret $P(-2.5 \leq D \leq 2.5)$.

4. Consider the given density curve.



- a. Mark your best estimate for the location of the median and label it. How did you choose this value?
- b. Mark your best estimate for the location of the mean and label it. How did you choose this value?
5. The distribution of a random variable is symmetric. Which of the following statements is guaranteed to be true?
- A) The variable is a continuous random variable.
 - B) The median is less than the mean.
 - C) The distribution is uniform.
 - D) None of the above.

6. Describe the shape of the following distribution.



- A) Uniform
- B) Approximately normal
- C) Skewed to the left
- D) Skewed to the right