1. Which of the following best describes a discrete random variable?

- \*\*b) A variable that can take on only a countable number of distinct values.\*\*

2. Which of the following is an example of a discrete random variable?

- \*\*c) Number of cars passing through an intersection in a given hour.\*\*

3. What is the probability mass function (PMF) used to describe?

- \*\*b) Discrete random variables.\*\*

4. Which of the following best describes a continuous random variable?

- \*\*b) A variable that can take on any value within a specified range.\*\*

5. Which of the following is an example of a continuous random variable?

- \*\*c) Temperature recorded in a city at noon.\*\*

6. The probability density function (PDF) is used to describe:

- \*\*b) Continuous random variables.\*\*

7. Which of the following statements is true about the cumulative distribution function (CDF)?

- \*\*c) It provides the probability of a random variable taking a value less than or equal to a given value.\*\*

8. Which of the following is a characteristic of the expected value of a random variable?

- \*\*d) It represents the long-term average value of the random variable.\*\*

9. Variance of a random variable measures:

- \*\*a) The spread of the distribution.\*\*

10. The standard deviation of a random variable is:

- \*\*b) A measure of how spread out the values of the random variable are.\*\*