KEY TERMS

A **random variable** is a variable whose possible values are numbers associated with outcomes of a random phenomenon.

A **discrete random variable** can take on only a countable number of distinct values – in other words, it is possible to list its possible values. Any random variable that can take on only a finite number of values is a discrete random variable. A **continuous random variable** can take on values in an interval.

The **probability distribution** of a discrete random variable x is a list of its possible values together with the probabilities associated with those values. The probability distribution is a model for the population distribution. The random variable's **mean** and **standard deviation** are computed as follows:

$$\mu = \sum x \cdot p(x)$$

$$\sigma^2 = \sum (x - \mu)^2 \cdot p(x) ; \ \sigma = \sqrt{\sigma^2}$$