Chapter 11 (p. 796, 11-1)

combination

combination: A selection of a group of objects in which order is *not* important. The number of combinations of *r* objects chosen from a group of *n* objects is denoted ${}_nC_r$.

For 4 objects *A, B, C,* and *D*, there are ${}_4C_2 = 6$ different combinations of 2 objects: *AB, AC, AD, BC, BD, CD.*

Chapter 11 (p. 812, 11-3)

conditional probability

conditional probability: The probability of event *B*, given that event *A* has already occurred or is certain to occur, denoted $P(B \mid A)$; used to find probability of dependent events.

Chapter 11 (p. 812, 11-3)

dependent events

dependent events: Events for which the occurrence or nonoccurrence of one event affects the probability of the other event.

From a bag containing 3 red marbles and 2 blue marbles, drawing a red marble, and then drawing a blue marble without replacing the first marble.

Chapter 11 (p. 805, 11-2)

experimental probability

experimental probability: The ratio of the number of times an event occurs to the number of trials, or times, that an activity is performed.

Kendra made 6 of 10 free throws. The experimental probability that she will make her next free throw is

$$P(\text{free throw}) = \frac{\text{number made}}{\text{number attempted}} = \frac{6}{10}.$$

Chapter 11 (p. 795, 11-1)

factorial

factorial: If n is a positive integer, then n factorial, written $n!$, is $n \cdot (n-1) \cdot (n-2) \cdot \ldots \cdot 2 \cdot 1$. The factorial of 0 is defined to be 1.

$7! = 7 \cdot 6 \cdot 5 \cdot 4 \cdot 3 \cdot 2 \cdot 1 = 5040$
$0! = 1$

Chapter 11 (p. 811, 11-3)

independent events

independent events: Events for which the occurrence or non-occurrence of one event does not affect the probability of the other event.

From a bag containing 3 red marbles and 2 blue marbles, drawing a red marble, replacing it, and then drawing a blue marble.

Chapter 11 (p. 802, 11-2)

theoretical probability

theoretical probability: The ratio of the number of equally likely outcomes in an event to the total number of possible outcomes.

The theoretical probability of rolling an odd number on a number cube is $\frac{3}{6} = \frac{1}{2}$.