

Quick Hit 9

1. You are drawing a single coin from a bag. The bag contains 5 copper coins, 3 silver coins, and 2 gold coins.

(a) What is the sample space? *Hint: use set-builder notation.*

$$S = \{x \mid x \text{ is a coin in the bag}\}$$

(b) What is the probability of drawing a copper coin?

$$C = \{x \mid x \text{ is a copper coin}\}$$

$$P(C) = \frac{n(C)}{n(S)} = \frac{5}{10} = .5$$

(c) What is the probability of drawing a silver or a gold coin?

$$L = \{x \mid x \text{ is a silver coin}\}$$

$$G = \{x \mid x \text{ is a gold coin}\}$$

$$P(L \cup G) = \frac{n(L \cup G)}{n(S)} = \frac{5}{10} = .5$$

2. Consider a standard deck of cards (52 cards, 13 in each suit).

(a) What is the probability of drawing a heart or a spade?

$$H = \{x \mid x \text{ is a heart}\}$$

$$P = \{x \mid x \text{ is a spade}\}$$

$$P(H \cup P) = \frac{n(H \cup P)}{n(S)} = \frac{26}{52} = .5$$

(b) What is the probability of drawing a heart or a jack?

$$J = \{x \mid x \text{ is a jack}\}$$

$$P(H \cup J) = \frac{n(H \cup J)}{n(S)} = \frac{n(H) + n(J) - n(H \cap J)}{52} = \frac{13 + 4 - 1}{52} = \frac{16}{52} \approx .31$$