

2.2 Practice Independent and Dependent Events

Determine if events A and B are independent. Show your work!

$$1) P(A) = \frac{7}{20} \quad P(B) = \frac{7}{20} \quad P(A \text{ and } B) = \frac{49}{400}$$

$$2) P(A) = \frac{2}{5} \quad P(B) = \frac{3}{10} \quad P(A \text{ and } B) = \frac{3}{50}$$

$$3) P(A) = \frac{13}{20} \quad P(B) = \frac{9}{20} \quad P(A \text{ and } B) = \frac{117}{400}$$

$$4) P(A) = \frac{9}{20} \quad P(B) = \frac{9}{20} \quad P(A \text{ and } B) = \frac{99}{400}$$

$$5) P(A) = \frac{2}{5} \quad P(B) = \frac{2}{5} \quad P(A \text{ and } B) = \frac{1}{5}$$

Events A and B are independent. Find the missing probability, showing work.

$$6) P(A) = \frac{11}{20} \quad P(A \text{ and } B) = \frac{143}{400} \quad P(B) = ?$$

$$7) P(B) = \frac{1}{2} \quad P(A \text{ and } B) = \frac{7}{20} \quad P(A) = ?$$

$$8) P(B) = \frac{2}{5} \quad P(A \text{ and } B) = \frac{2}{25} \quad P(A) = ?$$

$$9) P(A) = 0.5 \quad P(A \text{ and } B) = 0.275 \quad P(B) = ?$$

$$10) P(B) = 0.5 \quad P(A \text{ and } B) = 0.15 \quad P(A) = ?$$

$$11) P(B) = 0.2 \quad P(A \text{ and } B) = 0.07 \quad P(A) = ?$$

$$12) P(B) = 0.7 \quad P(A \text{ and } B) = 0.35 \quad P(A) = ?$$

$$13) P(A) = 0.4 \quad P(B) = 0.75 \quad P(A \text{ and } B) = ?$$

Determine whether the scenario involves independent or dependent events. Then find the probability, showing work.

- 14) A basket contains eight apples and five peaches. You randomly select a piece of fruit and then return it to the basket. Then you randomly select another piece of fruit. The first piece of fruit is an apple and the second piece is a peach.
- 15) You select two cards from a standard shuffled deck of 52 cards. Both selected cards are diamonds. (Note that 13 of the 52 cards are diamonds.)
- 16) You flip a coin twice. The first flip lands tails-up and the second flip also lands tails-up.
- 17) A basket contains five apples and five peaches. You randomly select one piece of fruit and eat it. Then you randomly select another piece of fruit. Both pieces of fruit are apples.
- 18) A box of chocolates contains eight milk chocolates and eight dark chocolates. You randomly pick a chocolate and eat it. Then you randomly pick another piece. Both pieces are milk chocolate.
- 19) A box of chocolates contains seven milk chocolates and five dark chocolates. You randomly pick a chocolate and eat it. Then you randomly pick another piece. The first piece is milk chocolate and the second piece is dark chocolate.
- 20) A spinner has an equal chance of landing on each of its seven numbered regions. You spin twice. The first spin lands in region six and the second spin lands in region two.
- 21) You roll a fair six-sided die twice. The first roll shows a four and the second roll shows a five.
- 22) A cooler contains ten bottles of sports drink: five lemon-lime flavored and five orange flavored. You randomly grab a bottle and give it to your friend. Then, you randomly grab a bottle for yourself. You and your friend both get lemon-lime.
- 23) A cooler contains eleven bottles of sports drink: three lemon-lime flavored, five orange flavored, and three fruit-punch flavored. You randomly grab a bottle. Then you return the bottle to the cooler, mix up the bottles, and randomly select another bottle. Both times you get a lemon-lime drink.