

Probability A20

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

- 1) A bag contains six red marbles and eight blue marbles. You randomly pick a marble and then pick a second marble without returning the marbles to the bag. Both marbles are red.
- 2) A bag contains seven red marbles and four blue marbles. You randomly pick a marble and then pick a second marble without returning the marbles to the bag. Both marbles are red.
- 3) A basket contains seven apples and four peaches. You randomly select a piece of fruit and then return it to the basket. Then you randomly select another piece of fruit. Both pieces of fruit are apples.
- 4) A basket contains seven apples and four 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.
- 5) A basket contains six apples and eight peaches. You randomly select a piece of fruit and then return it to the basket. Then you randomly select another piece of fruit. Both pieces of fruit are apples.
- 6) A box of chocolates contains six 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.

- 7) You select a card from a standard shuffled deck of 52 cards. You return the card, shuffle, and then select another card. Both times the card is a diamond. (Note that 13 of the 52 cards are diamonds.)
- 8) A box of chocolates contains six milk chocolates and five dark chocolates. You randomly pick a chocolate and eat it. Then you randomly pick another piece. Both pieces are milk chocolate.
- 9) A cooler contains eleven bottles of sports drink: five lemon-lime flavored, three 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.
- 10) You flip a coin twice. The first flip lands tails-up and the second flip also lands tails-up.

Determine if the scenario involves mutually exclusive events. Then find the probability.

- 11) A jar contains eight balls, numbered from one to eight. You randomly pick a ball. It is numbered six or eight.
- 12) A bag contains four yellow tickets numbered one to four. The bag also contains five green tickets numbered one to five. You randomly pick a ticket. It is yellow or has an odd number.

- 13) There are six nickels and six dimes in your pocket. Four of the nickels and four of the dimes are Canadian. The others are US currency. You randomly select a coin from your pocket. It is a nickel or is US currency.
- 14) A litter of kittens consists of two gray kittens, two black kittens, and two mixed-color kittens. You randomly pick one kitten. The kitten is gray or mixed-color.
- 15) A basket contains four apples and five peaches. Three of the apples and three of the peaches are rotten. You randomly pick a piece of fruit. It is fresh or it is an apple.
- 16) You roll a fair six-sided die. The die shows an odd number or a number greater than four.
- 17) A cooler contains eleven sports drinks: four lemon-lime and seven orange. One of the lemon-lime and four of the orange drinks are cold. The others are still warm. You randomly grab a bottle. It is orange flavored or warm.
- 18) You roll a fair six-sided die. The die shows an even number or a number less than five.
- 19) A magazine contains fifteen pages. You open to a random page. The page number is four or twelve.
- 20) A box of chocolates contains six milk chocolates and six dark chocolates. Four of the milk chocolates and three of the dark chocolates have peanuts inside. You randomly select and eat a chocolate. It is a milk chocolate or has no peanuts inside.