

## Mutually Exclusive/dependent/independent

Date \_\_\_\_\_ Period \_\_\_\_\_

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

- 1) A bag contains three white jerseys numbered one to three. The bag also contains five red jerseys numbered one to five. You randomly pick a jersey. It is white or has a number less than four.
- 2) A cooler contains eleven sports drinks: seven lemon-lime and four orange. Three of the lemon-lime and three of the orange drinks are cold. The others are still warm. You randomly grab a bottle. It is orange flavored or warm.
- 3) There are eleven shirts in your closet, six blue and five green. Three of the blue shirts and two of the green shirts fit well. The others are too big. You randomly select a shirt to wear. It is green or fits well.
- 4) A magazine contains twelve pages. You open to a random page. The page number is one or eight.
- 5) There are twelve shirts in your closet, five blue and seven green. Four of the blue shirts and five of the green shirts fit well. The others are too big. You randomly select a shirt to wear. It is blue or is too big.
- 6) A cooler contains eight sports drinks: four lemon-lime and four orange. Three of the lemon-lime and one of the orange drinks are cold. The others are still warm. You randomly grab a bottle. It is lemon-lime flavored or cold.

- 7) There are seven nickels and seven dimes in your pocket. Two of the nickels and five 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.
- 8) A basket contains six apples and six peaches. Three of the apples and four of the peaches are rotten. You randomly pick a piece of fruit. It is fresh or it is an apple.
- 9) 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. It is a lemon-lime or an orange.
- 10) A bag contains five red marbles, three blue marbles, and four yellow marbles. You randomly pick a marble. The marble is red or blue.
- 11) A basket contains five apples, three peaches, and four pears. You randomly select a piece of fruit. It is an apple or a peach.
- 12) A bag contains four red marbles, four blue marbles, and three yellow marbles. You randomly pick a marble. The marble is red or blue.
- 13) There are three nickels, three dimes, and three quarters in your pocket. You randomly pick a coin. It is a nickel or a dime.
- 14) A bag contains four red marbles, three blue marbles, and three yellow marbles. You randomly pick a marble. The marble is red or blue.

- 15) A cooler contains twelve bottles of sports drink: four lemon-lime flavored, five orange flavored, and three fruit-punch flavored. You randomly grab a bottle. It is a lemon-lime or an orange.
- 16) You roll a fair six-sided die. The die shows an odd number or a number less than five.
- 17) There are ten shirts in your closet, four blue and six green. Two of the blue shirts and five of the green shirts fit well. The others are too big. You randomly select a shirt to wear. It is blue or is too big.
- 18) A basket contains four apples, three peaches, and three pears. You randomly select a piece of fruit. It is an apple or a peach.
- 19) A bag contains four yellow tickets numbered one to four. The bag also contains three green tickets numbered one to three. You randomly pick a ticket. It is green or has a number greater than three.
- 20) A bag contains six yellow tickets numbered one to six. The bag also contains three green tickets numbered one to three. You randomly pick a ticket. It is yellow or has an odd number.

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

- 21) 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.)

## Answers to Mutually Exclusive/dependent/independent (ID: 1)

- 1) Not mutually exclusive;  $\frac{3}{4} = 0.75$
- 2) Not mutually exclusive;  $\frac{8}{11} \approx 0.727$
- 3) Not mutually exclusive;  $\frac{8}{11} \approx 0.727$
- 4) Mutually exclusive;  $\frac{1}{6} \approx 0.167$
- 5) Not mutually exclusive;  $\frac{7}{12} \approx 0.583$
- 6) Not mutually exclusive;  $\frac{5}{8} = 0.625$
- 7) Not mutually exclusive;  $\frac{9}{14} \approx 0.643$
- 8) Not mutually exclusive;  $\frac{2}{3} \approx 0.667$
- 9) Mutually exclusive;  $\frac{8}{11} \approx 0.727$
- 10) Mutually exclusive;  $\frac{2}{3} \approx 0.667$
- 11) Mutually exclusive;  $\frac{2}{3} \approx 0.667$
- 12) Mutually exclusive;  $\frac{8}{11} \approx 0.727$
- 13) Mutually exclusive;  $\frac{2}{3} \approx 0.667$
- 14) Mutually exclusive;  $\frac{7}{10} = 0.7$
- 15) Mutually exclusive;  $\frac{3}{4} = 0.75$
- 16) Not mutually exclusive;  $\frac{5}{6} \approx 0.833$
- 17) Not mutually exclusive;  $\frac{1}{2} = 0.5$
- 18) Mutually exclusive;  $\frac{7}{10} = 0.7$
- 19) Not mutually exclusive;  $\frac{4}{7} \approx 0.571$
- 20) Not mutually exclusive;  $\frac{8}{9} \approx 0.889$
- 21) Independent;  $\frac{1}{16} \approx 0.063$