Name_____

Independent and Dependent Events

Date_____ Period_____

Determine whether the scenario involves independent or dependent events.

1) There are eight nickels and eight dimes in your pocket. You randomly pick a coin out of your pocket and place it on a counter. Then you randomly pick another coin. Both coins are nickels.

2) A bag contains four red marbles and six blue marbles. You randomly pick a marble and then return it to the bag before picking another marble. Both the first and second marbles are red.

3) You flip a coin twice. The first flip lands heads-up and the second flip lands tails-up.

4) You roll a fair six-sided die three times. The die shows an even number every time.

Find the probability.

5) A bag contains three red marbles and three blue marbles. You randomly pick a marble and then return it to the bag before picking another marble. The first marble is red and the second marble is blue.

6) A spinner has an equal chance of landing on each of its six numbered regions. You spin twice. The first spin lands in region one and the second spin lands in region three.

7) There are seven boys and seven girls in a class. The teacher randomly selects one student to answer a question. Later, the teacher randomly selects a different student to answer another question. The first student is a boy and the second student is a girl.

8) A basket contains three apples, four peaches, and three pears. You randomly select and eat three pieces of fruit. The first piece of fruit is an apple and the next two pieces are peaches.

Determine if events A and B are independent.

9) $P(A) = \dfrac{11}{20}$ $P(B) = \dfrac{1}{4}$ $P(A \text{ and } B) = \dfrac{11}{100}$

10) $P(A) = \dfrac{1}{2}$ $P(B) = \dfrac{4}{5}$ $P(A \text{ and } B) = \dfrac{2}{5}$

11) $P(A) = \dfrac{9}{20}$ $P(B) = \dfrac{3}{10}$ $P(A \text{ and } B) = \dfrac{27}{200}$

12) $P(A) = \dfrac{7}{10}$ $P(\text{not } B) = \dfrac{7}{10}$ $P(A|B) = \dfrac{7}{20}$

Events A and B are independent. Find the missing probability.

13) $P(B) = \dfrac{11}{20}$ $P(A \text{ and } B) = \dfrac{33}{80}$ $P(A) = ?$

14) $P(A) = \dfrac{13}{20}$ $P(B) = \dfrac{7}{20}$ $P(A \text{ and } B) = ?$

15) $P(A) = \dfrac{7}{20}$ $P(B|A) = \dfrac{1}{4}$ $P(B) = ?$

16) $P(A) = \dfrac{13}{20}$ $P(B) = \dfrac{7}{10}$ $P(B|A) = ?$

17) $P(A) = \dfrac{7}{10}$ $P(B) = \dfrac{1}{2}$ $P(A \text{ or } B) = ?$

18) $P(B) = \dfrac{9}{20}$ $P(A|B) = \dfrac{7}{20}$ $P(A) = ?$

Find the missing probability.

19) $P(B) = \dfrac{1}{2}$ $P(A|B) = \dfrac{63}{100}$ $P(A \text{ and } B) = ?$

20) $P(A) = \dfrac{9}{20}$ $P(A \text{ and } B) = \dfrac{117}{400}$ $P(B|A) = ?$

21) $P(A) = \dfrac{2}{5}$ $P(B|A) = \dfrac{7}{20}$ $P(B) = \dfrac{2}{5}$ $P(A \text{ or } B) = ?$

22) $P(A) = \dfrac{3}{5}$ $P(B|A) = \dfrac{1}{5}$ $P(A \text{ and } B) = ?$

Name_____

Independent and Dependent Events

Date_____ Period_____

Determine whether the scenario involves independent or dependent events.

1) There are eight nickels and eight dimes in your pocket. You randomly pick a coin out of your pocket and place it on a counter. Then you randomly pick another coin. Both coins are nickels.

   Dependent

2) A bag contains four red marbles and six blue marbles. You randomly pick a marble and then return it to the bag before picking another marble. Both the first and second marbles are red.

   Independent

3) You flip a coin twice. The first flip lands heads-up and the second flip lands tails-up.

   Independent

4) You roll a fair six-sided die three times. The die shows an even number every time.

   Independent

Find the probability.

5) A bag contains three red marbles and three blue marbles. You randomly pick a marble and then return it to the bag before picking another marble. The first marble is red and the second marble is blue.

   $\dfrac{1}{4} = 0.25$

6) A spinner has an equal chance of landing on each of its six numbered regions. You spin twice. The first spin lands in region one and the second spin lands in region three.

   $\dfrac{1}{36} \approx 0.028$

7) There are seven boys and seven girls in a class. The teacher randomly selects one student to answer a question. Later, the teacher randomly selects a different student to answer another question. The first student is a boy and the second student is a girl.

   $\dfrac{7}{26} \approx 0.269$

8) A basket contains three apples, four peaches, and three pears. You randomly select and eat three pieces of fruit. The first piece of fruit is an apple and the next two pieces are peaches.

   $\dfrac{1}{20} = 0.05$

Determine if events A and B are independent.

9) $P(A) = \dfrac{11}{20}$ $P(B) = \dfrac{1}{4}$ $P(A \text{ and } B) = \dfrac{11}{100}$

   Dependent

10) $P(A) = \dfrac{1}{2}$ $P(B) = \dfrac{4}{5}$ $P(A \text{ and } B) = \dfrac{2}{5}$

   Independent

11) $P(A) = \dfrac{9}{20}$ $P(B) = \dfrac{3}{10}$ $P(A \text{ and } B) = \dfrac{27}{200}$

   Independent

12) $P(A) = \dfrac{7}{10}$ $P(\text{not } B) = \dfrac{7}{10}$ $P(A|B) = \dfrac{7}{20}$

   Dependent

Events *A* and *B* are independent. Find the missing probability.

13) $P(B) = \dfrac{11}{20}$ $P(A \text{ and } B) = \dfrac{33}{80}$ $P(A) = ?$

$\dfrac{3}{4}$

14) $P(A) = \dfrac{13}{20}$ $P(B) = \dfrac{7}{20}$ $P(A \text{ and } B) = ?$

$\dfrac{91}{400}$

15) $P(A) = \dfrac{7}{20}$ $P(B|A) = \dfrac{1}{4}$ $P(B) = ?$

$\dfrac{1}{4}$

16) $P(A) = \dfrac{13}{20}$ $P(B) = \dfrac{7}{10}$ $P(B|A) = ?$

$\dfrac{7}{10}$

17) $P(A) = \dfrac{7}{10}$ $P(B) = \dfrac{1}{2}$ $P(A \text{ or } B) = ?$

$\dfrac{17}{20}$

18) $P(B) = \dfrac{9}{20}$ $P(A|B) = \dfrac{7}{20}$ $P(A) = ?$

$\dfrac{7}{20}$

Find the missing probability.

19) $P(B) = \dfrac{1}{2}$ $P(A|B) = \dfrac{63}{100}$ $P(A \text{ and } B) = ?$

$\dfrac{63}{200}$

20) $P(A) = \dfrac{9}{20}$ $P(A \text{ and } B) = \dfrac{117}{400}$ $P(B|A) = ?$

$\dfrac{13}{20}$

21) $P(A) = \dfrac{2}{5}$ $P(B|A) = \dfrac{7}{20}$ $P(B) = \dfrac{2}{5}$ $P(A \text{ or } B) = ?$

$\dfrac{33}{50}$

22) $P(A) = \dfrac{3}{5}$ $P(B|A) = \dfrac{1}{5}$ $P(A \text{ and } B) = ?$

$\dfrac{3}{25}$