Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Period\_\_\_\_\_\_\_\_\_\_

**Use the spinner and number cube (numbered from 1 to 6) to answer questions 1 – 5.**

Yellow

Green

Blue

Red

**In a game, a player must spin the spinner and roll a number cube.**

1. What is the probability of a player spinning the color blue and then rolling a 4?\_\_\_\_\_\_\_\_\_

2. What is the probability of a player spinning the color yellow and then rolling a 1 or 3?\_\_\_\_\_\_\_\_\_

3. What is the probability of a player spinning the color red or green and then rolling a 5?\_\_\_\_\_\_\_\_\_

4. What is the probability of a player spinning the color red or yellow and then rolling an even

 number?\_\_\_\_\_\_\_\_

5. What is the probability of a player spinning the color blue and then rolling a 7?\_\_\_\_\_\_\_\_\_

 Why?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Use the four coins below to answer questions 6 – 7.**

 Fredrick tosses all four pennies at the same time.

6. What is the probability that all four pennies will land heads up?\_\_\_\_\_\_\_\_\_\_

7. What is the probability that two pennies will land heads up and two pennies will land tails up?\_\_\_\_\_\_\_\_\_\_

**Alonso places all the marbles shown at the right in a bag. Use the marbles to answer questions 8 – 10. He randomly chooses two marbles, one at a time.**

8. What is the probability of Alonso randomly choosing a

blue

blue

blue

blue

green

red

green

green

red

blue

 blue marble on the first pick, replacing it, and then randomly

 choosing a red marble on the second pick?\_\_\_\_\_\_\_\_\_\_

9. What is the probability of Alonso randomly choosing a

 blue marble on the first pick, not replacing it, and then randomly

 choosing a red marble on the second pick?\_\_\_\_\_\_\_\_\_

10. What is the probability of Alonso randomly choosing a red marble on the first pick,

 not replacing it, and then randomly choosing a green marble on the second pick?\_\_\_\_\_\_

\_\_\_\_\_11. The results of a random survey showed that 42 out of 60 people plan to vote early

in the next election. Which is the best prediction of the total number of people that plan to vote early out of 300 people?

 A. 47 C. 429

 B. 294 D. 210

\_\_\_\_\_12. The probability of a video game being defective is . About how many video games would be defective in a shipment of 490 video games?

 A. 25 C. 50

 B. 20 D. 100

\_\_\_\_\_13. Aaron took a multiple choice test. There were 25 questions, of which he answered 4 incorrectly. At this rate, how many questions should Aaron expect to answer incorrectly if he takes a test with a total of 150 questions?

 A. 6 C. 24

 B. 10 D. 4

\_\_\_\_\_14. Keisha made 12 out of her last 58 shots on goal. At this rate, about how many shots will Keisha make out of 300 shots?

 A. 3 C. 5

 B. 60 D. 25

\_\_\_\_\_15. A researcher observed students buying lunch in a cafeteria. Of 50 students, 12 bought an apple. About how many students out of 2100 would purchase an apple?

 A. 500 C. 200

 B. 40 D. 1000

\_\_\_\_\_16. A researcher polled 240 random students at a university and found that 81 of them owned a laptop computer. What is an estimate of the probability that a randomly selected college student owns a laptop computer?

 A.  C. 

B.  D. 

\_\_\_\_\_17. There are 480 students in Marla’s school. In her classroom, there are 3 left-handed students and 17 right-handed students. Predict the number of left-handed students in the whole school.

 A. 408 C. 72

 B. 160 D. 85

\_\_\_\_\_18. An ice-skating rink inspects 25 pairs of skates and finds 2 pairs to be defective. The rink has 151 pairs of ice skates. Estimate the number of pairs that are likely to be defective.

 A. 12 C. 8

 B. 6 D. 24

\_\_\_\_\_19. A toy store discovered that 1 out of 6 toys made by the Acme Toy Company is defective. Suppose the store has sold 20 of the toys made by the company and wants to know the probability of a customer buying a defective toy. Which of the following simulations could be used to simulate customers buying a defective toy?

1. flipping a coin

1. spinning a spinner that contains 4 equally sized sections

1. rolling a number cube numbered 1 – 6

D. drawing a card from a bag containing 6 white and 20 black cards

\_\_\_\_\_20. On the first Saturday of each month, a local grocery store gives 50% of its customers a free 12-pack of soda. Which of the simulations below could be used to calculate the probability of receiving the free soda?

1. spinning a spinner that contains 12 equally sized sections
2. rolling a number cube numbered 1 – 6
3. flipping a coin

D. drawing a marble from a bag that contains 50 marbles, 12 of which are white and the rest are black

\_\_\_\_\_21. From a deck of 52 cards, two cards are randomly drawn without replacement. Which expression represents the probability of drawing two hearts?

 A.  C. 

B.  D. 

22. The Venn diagram shows how many of the 40 students surveyed have a dog, cat, or both as a pet.

**Types of Pets**

Dogs

5

Cats

2

3

Use the information in the diagram to find the probability that a student has a dog as a pet.

 **\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Use the information in the diagram to find the probability that a student has a cat as a pet.

 **\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Use the information in the diagram to find the probability that a student has neither a dog or cat as a pet.

 **\_\_\_\_\_\_\_\_\_\_\_\_\_\_**