

Probability Test Review

Name: Answer Key

Decide whether each event is dependent or independent:

- I 1. Tossing a coin three times
- I 2. Pulling a sock out of a bag, putting it back, and picking another sock
- D 3. Picking a piece of candy out of a bag, eating it, then picking another piece of candy
- D 4. Zach picks a King from a standard deck of cards and then picks a spade without replacing the first card.

Find the probability of each series of events:

- 1/4 5. Rolling an even number on the first roll of a standard number cube and rolling an even number on the second roll of the same cube.

$$\frac{1}{2} \cdot \frac{1}{2} = \frac{1}{4}$$

- 5/33 6. Evan has 4 pennies, 3 nickels, and 5 dimes in his pocket. If he randomly chooses a coin, keeps it, and then chooses another coin; what is the probability that both are dimes?

$$\frac{5}{12} \cdot \frac{4}{11} = \frac{5}{33}$$

- 15/196 7. A vase has 6 tulips, 10 daisies, and 12 roses. Find the probability of randomly picking a daisy, replacing it, and then picking a tulip.

$$\frac{10}{28} \cdot \frac{6}{28} = \frac{15}{196}$$

- 14/55 8. Lilly has the letters P R O B A B I L I T Y in a bag. If she chooses 2 letters without replacing the first, what is the probability that Lilly will choose a vowel and then not a vowel.

$$\frac{4}{11} \cdot \frac{7}{10} = \frac{14}{55}$$

A jar contains 12 green tokens, 6 red, and 2 black tokens.

- 3/100 9. What is the probability that a red is chosen, replaced, and then a black is chosen?

$$\frac{6}{20} \cdot \frac{2}{20} = \frac{3}{100}$$

- 11/95 10. What is the probability two green tokens are chosen and then a red token? (all without replacement)

$$\frac{12}{20} \cdot \frac{11}{19} \cdot \frac{6}{18} = \frac{11}{95}$$

6/95

11. What is the probability a black token is chosen, kept out and then a green token is chosen?

$$\frac{2}{20} \cdot \frac{12}{19} = \frac{6}{95}$$

Determine if each event is impossible, unlikely, as likely as not, likely, or certain.

12. impossible You roll a sum of 13 when rolling two dice.

13. certain There are 10 cards in a box numbered 1-10. A card is pulled from the box. How likely is it that a card less than 11 is chosen?

14. equally likely You pick a spade or heart from a standard deck of cards.

15. unlikely The probability that you pick a blue marble in a jar of 5 green and 4 blue marbles.

Duke has a spinner that is divided into three equal-sized sections. Each section is a different color. He spun the spinner multiple times, and his results are shown to the right.

Color	Number of Spins
red	
green	
yellow	

15. $\frac{6}{30} = \frac{1}{5}$ Based on the data, what is the experimental probability that the spinner will land on red?

16. $\frac{1}{3}$ What is the theoretical probability that the spinner will land on red?

17. _____ What is the difference between theoretical and experimental probability?

Theoretical is what should happen, and experimental is what does happen.

18. 16 times How many times theoretically would the spinner land on green if you spun it 48 times?