

1. A bag contains 13 purple marbles, 9 green marbles, 6 blue marbles, 8 yellow marbles, and 12 red marbles. What is the probability of pulling out a yellow marble?
- _____

2. One letter is chosen at random from the word PERSONALITY. What is the probability that the letter chosen is the letter P?
- _____

3. A number cube has 6 sides. The sides have the numbers 3, 8, 3, 7, 4, and 7. If the cube is thrown once, what is the probability of rolling the number 3?
- _____

For **4** through **12**, find the probability.

4. A jar contains 23 navy, 7 blue, 6 violet, and 18 black marbles. A marble is drawn at random. Find $P(\text{black or navy})$.
- _____

5. A jar contains 18 yellow, 26 purple, and 9 white marbles. A marble is drawn at random. Find $P(\text{not white})$.
- _____

6. You roll a number cube from 1 to 6. Find $P(\text{a number greater than 2})$.
- _____

7. A jar contains 5 white, 24 navy, 8 orange, and 16 red marbles. A marble is drawn at random. Find $P(\text{navy})$.
- _____

8. You roll a number cube from 1 to 6. Find $P(2, 5, 4, \text{ or } 3)$.
- _____

9. You roll a number cube from 1 to 6. Find $P(\text{a number divisible by 4})$.
- _____

10. A jar contains 11 red, 16 violet, 6 green, and 25 gray marbles. Find $P(\text{green})$.
- _____

11. A number from 17 to 26 is drawn at random. Find $P(\text{an even number})$.
- _____

12. A number from 9 to 15 is drawn at random. Find $P(15, 9, 11, \text{ or } 14)$.
- _____

You spin a spinner divided into thirds and labeled A, B, C, and you flip a coin. Use a tree diagram to answer questions **13** through **15**.

13. How many outcomes show B and heads?

14. What is the probability of C and tails?

15. What is the probability of B and heads **or** tails?

16. Six friends are playing a board game and they need to make three teams of two. How many different teams of two can be made? Solve this problem by solving a simpler problem.

17. A girl scout troop is selling candy apples for a fundraiser. Of the first 100 people that bought candy apples, 35 bought plain. Predict how many plain candy apples will be sold if the troop sells 410 candy apples.

18. Bjorn is writing the 5 letters in his name in different orders. In how many different orders can he write the letters?

19. Joseph is making a sandwich. He can choose turkey, ham, or peanut butter on white or whole-wheat bread. How many different combinations of bread and filling can Joseph choose from?

20. Writing to Explain Keith has 4 different shirts, 3 different pairs of pants, and 2 different pairs of shoes in his closet. How many possible outfits of shirt, pants, and shoes can he make? Explain.
