

Unit 8: Probability and Sampling

ADVANCED

Name: _____ Date: _____

Show your work and give each answer as an exact fraction, decimal, or number in lowest terms.

1. A spinner has 8 equal sections numbered 1 to 8. What is the probability that one spin lands on a number that is both even AND greater than 3? Give your answer as a fraction in lowest terms.

Answer: _____

3. Two fair six-sided dice are rolled. What is the probability that the sum of the two dice equals 9? Give your answer as a fraction in lowest terms.

Answer: _____

5. A survey of a random sample of 80 students found that 18 walk to school. Based on this sample, estimate how many of the school's 1,240 students walk to school. Give your answer as a whole number.

Answer: _____

7. The probability that a randomly chosen light bulb from a factory is defective is $\frac{3}{50}$. In a shipment of 2,500 bulbs, how many are expected to be defective? Give your answer as a whole number.

Answer: _____

9. In a random sample of 120 fish caught from a lake, 45 were trout. If the lake is estimated to contain 4,000 fish, estimate the number of trout in the lake. Give your answer as a whole number.

Answer: _____

2. A bag holds 12 red, 8 blue, and 5 green marbles. One marble is drawn at random. What is the probability it is NOT blue? Give your answer as a fraction in lowest terms.

Answer: _____

4. A fair coin is flipped 3 times. What is the probability of getting exactly 2 heads? Give your answer as a fraction in lowest terms.

Answer: _____

6. A box contains 5 white and 7 black chips. Two chips are drawn one after another WITHOUT replacement. What is the probability that both chips are black? Give your answer as a fraction in lowest terms.

Answer: _____

8. A spinner is spun and a coin is flipped. The spinner has 5 equal sections colored red, red, blue, green, yellow. What is the probability of getting a red section AND a tail? Give your answer as a fraction in lowest terms.

Answer: _____

10. A drawer has 6 black socks and 4 white socks. Two socks are pulled out at random without replacement. What is the probability that the two socks match (both same color)? Give your answer as a fraction in lowest terms.

Answer: _____

11. A raffle has 250 tickets. Maria buys 15 tickets and Sam buys 10 tickets. One winning ticket is drawn at random. What is the probability that either Maria or Sam wins? Give your answer as a fraction in lowest terms.

Answer: _____

12. A jar contains 4 grape, 6 cherry, and 10 lemon candies. Two candies are drawn without replacement. What is the probability that the first is grape and the second is cherry? Give your answer as a fraction in lowest terms.

Answer: _____