

# Probability

One to One Tutoring

May 10, 2010

1. What is the probability that a die is rolled and gives an even number?
2. What is the probability that two dice are rolled, and both give even numbers?
3. What is the probability that two dice are rolled, and the sum of the two numbers is 7?
4. What is the probability of flipping a coin 8 times, and getting the same result every time?
5. What is the probability of tossing 5 dice and having them all give numbers less than 5
6. A bucket contains equal numbers of red, blue, and green candy. You pull one piece out. What is the probability that the piece is not green? Does your answer depend on the number of candies in the bucket?
7. A bucket contains equal numbers of red, blue, and green candy. You pull two pieces out. What is the probability that the pieces are different colors? Does your answer depend on the number of candies in the bucket?

8. You play a game involving one dice roll and one coin toss. The coin is tossed first. If it is heads, you get 10 points and the game is over. If you get tails, you earn 7 points and get to roll the die. When you roll the die, you earn however many points show on the die's face. What is the probability that you play this game and score 10 points exactly?
  
9. Fifteen men and twenty women are in a room. Of the women, twelve are unmarried. Half as many of the men are unmarried. Exactly two pair of men and women are married to each other. What is the probability that a man and a woman, chosen at random, will both be married? What is the probability that a man and a woman, chosen at random, will both be married, but not to each other?
  
10. Using the digits 0 through 9, how many 5 digit numbers can you create? How many can you create if no digit can be used more than once? Given a random 5 digit number, what is the probability that it has at least two of the same number in it?
  
11. A store offers three kinds of ice cream, chocolate, vanilla, and strawberry. You get a cone with two scoops, one vanilla and one chocolate. What is the probability that your friend, when he orders randomly, will get no more than one of the same flavors you did.
  
12. A checker board has both its rows and columns labeled 1 through 8. You pick a square at random and multiply the row value by the column value. You notice that the number you got is a perfect square. You then look at all of the squares next to the one you chose. You compute the product of their row and column values. What is the probability that one of these numbers will be prime?