

[probability]

1. Find the probability that a number chosen at random between 1 and 100 inclusive is
 - a. Divisible by 5
 - b. Not a perfect square
 - c. Divisible by 3 or 7
2. A box contains 2 red marbles, 2 white marbles, 2 black marbles, 2 green marbles, and 2 yellow marbles. Assume that the marbles are drawn randomly.
 - a. If one marble is selected, what is the probability that it is green?
 - b. If the first marble selected is green and that marble is not returned to the box, then what is the probability that the second marble drawn is also green.
3. One card is dealt from a deck of 52 cards and it is a heart. Two more cards are then dealt. What is the probability that these two cards are also hearts?
4. Three dice are rolled. What is the probability that all 3 dice turn up the same?
5. A six person committee is selected from 8 men and 10 women.
 - a. What is the probability that there will be 3 men and 3 women on the committee?
 - b. What is the probability that Tom and Linda will be on the committee?
 - c. What is the probability that at least two women will be on the committee?
6. One card is drawn from a deck of 52 cards. What is the probability that
 - a. Either a face card or an ace is drawn?
 - b. Either a spade or a face card is drawn?
7. In a company of 1 000 employees: 400 participate in the profit sharing plan, 800 participate in the drug plan, and 340 are in both plans. What is the probability that an employee in the profit sharing plan is in the drug plan also?
8. A bag contains white marbles, a red marble, and blue marbles. There are three white marbles, and each are marked differently with a one, two, or three. The red marble is marked with a four. There are four blue marbles, each marked differently with a five, six, seven, or eight. A marble is selected at random from the bag. If the marble selected is known to be marked with an odd number, what is the probability that the marble is also white?
9. Sam and Sally work on an assembly line assembling compasses. Sam produces 62% of the total output but 8% of his are defective. Sally produces 38% of the total output but 3% of hers are defective. If a compass is chosen at random and it is found to be defective then what is the probability that it was made by Sally?
10. What is the probability that in a group of four people that at least two of them have birthdays in the same month?

11. Linda is about to do her data management homework. The odds that she gets the first question correct are 3:2. If she gets a question correct, the probability that she gets the next question correct is increased by 0.15. If she gets a question wrong then the probability that she gets the next question correct is decreased by 0.10. There are three questions in the homework. Find the probability that Linda gets only two questions correct.
12. The disease Finitis occurs in a 0.4% of the population. Detection of the disease is made by a special blood test. If a person has finitis, then the test is positive 92% of the time. The test produces a false positive 1% of the time. A person is selected at random. What is the probability that the person has the disease given that the test was positive?

