

Probability of an Event: Practice Problems

January 2023

1. A bowl contains 15 balls: 6 are red, 5 are blue and 4 are green. What is the probability that two balls selected at random from the bowl have the same color?
2. What is the probability that a integer between 1 and 100 is divisible by 3 or 7?
3. In poker, each player is dealt (supplied with) five of the 52 cards, called a *hand*.
 - (a) How many different hands are there?
 - (b) What is the probability of being dealt with the following poker hand:
$$\{3\heartsuit, 5\diamondsuit, 6\clubsuit, 10\clubsuit, Q\diamondsuit\}$$
 - (c) A hand that consists of five cards of the same suit is called a *flush*. What is the probability of getting a flush?
 - (d) A *pair* in poker are two cards of the same value (e.g., two twos or two eights). What is the probability of being dealt a hand of two pairs?
4. At school, 4 girls and 6 boys are lining up for a class picture in a random order. What is the probability that...
 - (a) ... all girls are standing next to each other?
 - (b) ... all the girls are next to each other and all the boys as well?
5. A computer is generating a random number between 0 and 100. What is the probability that...
 - (a) ... it doesn't contain digit 7?
 - (b) ... it contains unique digits (e.g., 123 but 111)?
6. You are distributing $n = 15$ identical candies among $k = 7$ kids. What is the probability that each kid gets at least one candy?