

A bag contains 5 red balls and 7 green ones. You draw three times **without** replacement.

1. What is the probability all three are red?
2. What is the probability all three are the same color?

3. Roll a pair of dice. What is the probability you got doubles given that the sum is 4?
4. Roll a pair of dice. What is the probability you got doubles or a sum of 8?
5. Deal two cards from a well shuffled deck. What is the probability the first is an ace or the second is a king?
6. Deal two cards from a well shuffled deck. What is the probability at least one of them is the ace of spades?

You have a biased coin that lands head 65% of the time and lands tails 35% of the time. Flip it 6 times.

7. What is the probability you get exactly 5 heads?
8. What is the probability you get more heads than tails?

Roll a pair of dice 20 times.

9. What is the probability you get double sixes at least once?
10. What is the probability you get double sixes at least twice?

11. You set up a lotto game with your friends. An entry consists of a choice of 6 numbers from 1 to 20. You win if you match the 6 numbers in that range drawn at random by the game's administrator. (The order of the numbers doesn't matter.)
What is the probability of winning?
12. In a multiple choice test, you have a choice of four answers for each question. If you guess right, you get 4 points. If you guess wrong, you lose a point. Suppose the test has 25 questions, and a passing score is 30. What is the probability you can pass by guessing?

Exam 2

Game: Draw twice with replacement from the following box:

1	2	3	4	5	6	7
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If the sum is 2, you win \$45. Otherwise you lose \$1.

Suppose you play the game 980 times. The next three questions concern your net gain/loss.

13. What is the probability you lose at least \$30?
14. What is the probability you lose at least \$100?
15. What is the probability you win at least \$100?