

1. How many ways can you arrange the letters in
GREENVILLE MISSISSIPPI
so that no two vowels are next to each other?
2. Roll five dice. What is the probability that a 4 is the highest number shown?
3. What is the probability of getting a full house in 7 card poker (i.e., you get three cards in one denomination, at least two cards in at least one other denomination, and no denomination has four cards)?
4. A pile of cards consists of 8 hearts and 11 diamonds. You draw 6 at random.
 - a) What is the probability you get more diamonds than hearts?
 - b) What is the probability you get more diamonds than hearts if you know you have at least 2 hearts?
5. A marksman gets bullseyes on 85% of his shots.
 - a) What is the probability he gets at least 9 bullseyes in 11 shots?
 - b) Suppose he shoots until he gets 9 bullseyes. What is the probability it takes him at most 11 shots?
6. A certain country has a careless mint. One out of every 901 coins has two heads. The others are normal.

Suppose you choose a coin at random and flip it six times. It comes up heads each time.

 - a) What is the probability you picked a two-headed coin, given that it comes up heads all six times?
 - b) What is the probability you get heads on a 7-th toss, given that the first six tosses came up heads?