

1. How many ways can you arrange the letters in  
WALLA WALLA WASHINGTON  
so that no two vowels are next to each other?
2. Roll three dice. What is the probability that a 5 is the highest number shown?
3. What is the probability you get two pairs in a five card poker hand?
4. A committee consists of 4 men and 5 women. A four-person subcommittee is chosen at random.
  - a) What is the probability there are at least 2 women on the subcommittee?
  - b) What is the probability there are at least 2 women on the subcommittee if there is at least 1 man on it?
5. A marksman gets bullseyes on 75% of his shots.
  - a) Suppose he shoots 12 times. What is the probability he gets at least 10 bullseyes?
  - b) Suppose he shoots until he gets 10 bullseyes. What is the probability it takes him at most 12 shots?
6. Urn A has 6 red balls and 4 green ones. Urn B has 3 red balls and 7 green ones.

Flip **three** coins. If you get **two** heads, draw from Urn A. Otherwise, draw from Urn B.

Then draw a second ball from the same urn without replacement.

  - a) If the first ball is red, what is the probability it came from Urn A?
  - b) If the first ball is red, what is the probability the second ball is red?