

1. How many ways can you arrange the letters in  
CHICOPEE MASSACHUSETTS  
so that no two vowels are next to each other?
2. a) How many ways can you distribute 10 identical flyers to 6 mailboxes?  
b) How many ways can you distribute 10 identical flyers to 6 mailboxes so that each mailbox has at least one letter in it?
3. A poker-like game has 10-card hands. What is the probability you get four cards of one kind and at least three cards of a second kind?
4. A committee consists of 7 men and 9 women. You select a 6-member subcommittee at random.  
a) What is the probability you get more women than men?  
b) What is the probability you get more women than men if you know you have at least 1 man?
5. A marksman gets bullseyes on 95% of his shots.  
a) What is the probability he gets at least 12 bullseyes in 14 shots?  
b) Suppose he shoots until he gets 12 bullseyes. What is the probability it takes him at most 14 shots?
6. Urn A has 9 red balls and 3 green balls. Urn B has 7 red balls and 5 green balls.  
Flip a coin twice. If you get two heads, draw from Urn A. Otherwise, draw from Urn B.  
a) If the ball is red, what is the probability it came from Urn A?  
b) If the ball is red, what is the probability you get another red ball if you draw without replacement from the same urn?