

1. How many ways can you arrange the letters in
WILLIAMSTOWN MASSACHUSETTS
so that no two vowels are next to each other?
2. a) How many ways can you distribute 20 identical flyers to 5 mailboxes?
b) How many ways can you distribute 20 identical flyers to 5 mailboxes so that each mailbox has at least 2 flyers in it?
3. A poker-like game has 10-card hands. What is the probability you get three cards in at least two denominations, and no more than three in any denomination?
4. A committee consists of 8 men and 12 women. You select a 7-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 2 women?
5. A marksman gets bullseyes on 92% of his shots.
a) What is the probability he gets at least 15 bullseyes in 17 shots?
b) Suppose he shoots until he gets 15 bullseyes. What is the probability it takes him at most 17 shots?
6. Urn A has 8 red balls and 3 green balls. Urn B has 5 red balls and 6 green balls.
Flip a coin 4 times. If you get exactly 2 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?