

Lab Assignment #13

This lab is due at 9:35 AM on Monday, 3/18 and is worth 6 points. This may be done individually, or in a group of 2 or 3 people.

Write each probability answer as a fraction, or a decimal to at least 3 significant digits, or a percent to at least 3 significant digits. Show work.

1)a) Imagine that you are in a group with 5 people, including yourself. Imagine that from your group of 5 people, a president and vice-president are chosen. How many possibilities are there of a "ticket" including a president and a vice-president, chosen from 5 people?

b) Choose a president, vice-president, and treasurer from a group of 5 people. How many ways are there to choose people for these 3 jobs from a group of 5 people?

c) You and 4 friends from Stat 300 want to form a 2-person grievance committee to discuss with your instructor how the last exam was graded. What is the number of different 2-person committees that can be formed from a group of 5 people?

d) What is the number of different 3-person committees that can be formed from a group of 5 people?

2) You plan a trip to the Big Island of Hawaii, and you want to bring 3 out of your 9 bathing suits. How many different groups of 3 bathing suits can be chosen for this trip?

3) A social security number contains 9 digits, each of which could be 0 through 9. How many social security numbers are possible?

4) Today at Go Dog LA, there are 10 dogs present for doggie day care.

a) You want to walk 4 dogs. How many different groups of 4 dogs could be chosen for this walk?

b) You want to choose 2, 3, or 4 dogs to put into the indoor play area. How many ways are there to do this?



c) Three dogs go home before dinner, and you feed the rest one at a time. How many different ways are there to choose the order to feed these dogs?

5)a) In a lottery game, you must correctly choose which 4 whole numbers from 1 to 38 are chosen. A number cannot be chosen more than once. You win if you get all 4 numbers correct. What is the probability of winning?

b) In a different lottery game, 4 whole numbers from 1 to 38 are chosen. A number cannot be chosen more than once. You win if you get all 4 numbers correct, including the correct sequence (which number is first, second, third, and fourth.) What is the probability of winning?

c) In a different lottery game, 4 whole numbers from 1 to 38 are chosen. A number can be chosen more than once. You win if you get all 4 numbers correct, including the correct sequence (which number is first, second, third, and fourth.) What is the probability of winning?

6) License plates in the state of North Delucky have 3 letters (chosen from A-Z) followed by 4 digits (chosen from 0–9). Repetition of letters and digits is allowed. How many different license plates are possible?

7)a) A coin is flipped 9 times. What is the number of possible outcomes? (Note: outcome is defined as a sequence of flips, order matters. HHHHHTTTT is a different outcome than HHHHTTTTH.)

b) Same experiment as (a). Fill in with a whole number: The number of heads shown on the 9 flips can be any of _____ different whole numbers.

8) For your summer reading project, you must read 6 books chosen from a list of 17. You must write a 400-word theme on the first book you read, make a diorama for the second book you read, film a music video for the third book you read, dress as a character from the fourth book you read, start a Wikipedia page on the fifth book you read, and convince your BFF to read the sixth book that you read. In how many ways can you choose 6 books and which task you will do for each book? (Looking for one answer.)