

Written Assignment # 7

Your paper should have the following information on it.

- Your name
- Your student ID number
- Which section you are in: 02 MWF, or 04 TTh

Specifications for Grading

To earn a passing mark, your assignment must:

- be typed, and no more than three pages in length. Diagrams may be hand drawn.
- address the writing prompts below.
- conform to reasonable standards for grammar, spelling, and usage of the English language with minimal errors. (You may consider seeking help on writing from the Writing Center in the Academic Learning Center. <http://www.uni.edu/unialc/writing-center>)
- be turned in by 3pm on Friday, March 4.

All of the tasks here require you to compute some sort of probability. I suggest that you find a way to make a decision tree, or some other model of the sample space, to help your thinking.

Warm-Ups

Task 1. You flip a coin at ten times. What is the probability that you see at least one head?

Task 2. Suppose the chances are 1 in 2 that Monday will be sunny. Suppose that the chances that your math teacher will bring donuts on Monday is 1 in 50. What are the chances that it will be sunny and you will get donuts in math class on Monday?

Important Life Questions

Task 3. The Marcus Theaters at College Square is currently showing 11 different movies. You want to see a different movie on each of Thursday, Friday, and Saturday night.

If the order of the movies does not matter to you, how many different three-night-movie-extravaganzas could you plan?

Task 4. In the situation of the last question, suppose now that the order of the movies DOES matter to you. how many three night viewing parties can you plan?

Challenges

Task 5. You have a part-time job in a department with 20 other people. (So there are 21 employees total, including you.) A rumor has spread that 6 people from the department are getting raises. If those 6 people are chosen at random, what is the probability that you will get a raise?

Task 6. In 1988, the ignition keys for Ford Escorts were made out of a blank key with five cuts, and each cut could be made to one of five different depths. How many different key types were there?

In 1988, Ford made about 380,000 Escorts. What is the probability that a given key could unlock a randomly chosen Ford Escort?