AMAT 362—Work Sheet 08

Dr. Justin M. Curry

Due: February 23rd, 2022. Worth 14 points.

Name: _____

1. (1 point) A flush in poker is a five card hand where each card has the same suit. What's the probability of a flush?

2. (1 point) How many ways are there to choose 12 donuts from the 22 varieties of donuts at a donut shop?

3. (2 points) How many ways can you give 10 cookies to 4 distinct people, assuming each person gets at least 1 cookie?

4. (2 points) Assume that $P(\text{Woman} \mid \text{Yoga Person}) = 75\%$. What's the probability that a 10 person yoga class has at least 8 women in it?

5. (6 points) I can land a heel flip `https://youtu.be/2A2P_tcqaZ8` once out of every 42 attempts.
   (a) (2 points) What's the probability that I'll land a heel flip in the first 3 attempts?

(b) (2 points) What's the probability that I'll land a heel flip after 5 tries?

(c) (2 points) How many times should I try to do a heel flip to make it more than 50% likely that I'll land at least one heel flip?

6. (2 points) Challenge Problem: How many 5-digit numbers have their digits in non-decreasing order? Examples include: 55555 and 12345. Non-examples include 12343. Hint: This is a stars and bars problem.