STA134 **Worksheet 1** Lisha section

Exercise. You have a fair, 6 sided die. $\frac{1}{3}$ of the die is colored red, $\frac{2}{3}$ blue.

1. What is the probability of getting a red face in 3 rolls or less.

2. What is the probability it takes 4 or more rolls to get a red face?

Exercise. You have a $\frac{1}{4}$ chance of winning a bet on horse 4. There are 7 horses. How many races must you bet on to have a greater then 50% chance of winning at least one of these bets?

Exercise. You have two pancakes that are burned on both sides, 1 burned on one side and not burned ont the other, and 3 not burned on both sides. You absentmindedly flip (without looking) one of the pancakes and see that the side on top is not burnt, what is the probability that the other side is burnt?

Exercise. Suppose that you have some werid anatomical ability to tell if it will thunderstorm. That is, oftentimes you get migranes before it storms. This happens with 90% of the time. 2% of the time, when it doesn't storm, you also get a mirgrane. Suppose in this strange world, it storms 5% of the time. You have your headphones on one day, not looking out the window and start getting a migrane. What is the probability it is about to storm outside?