Stats 300 **Spring 2024**

Counting Problems

1) A ZIP code contains 5 digits, each can be 0-9. How many ZIP codes are possible?

2) Your house number has 4 different digits, for example: 3851. In how many ways can these digits be arranged?

3) Your teacher gives a $5 gift card to the student with the highest score, a gold star for the second-highest score, and a pat on the back for the third-highest score. In a class of 40 students, how many different ways can these 3 prizes be given?

4) Your teacher gives a $5 gift card to the students with the 3 highest scores. In a class of 40 students, how many different ways can these 3 prizes be given?

5) A couple has 5 children: 3 boys and 2 girls. How many birth orders (such as BBGBG) are possible?

More conditional probability

Suppose that 20% of all college students take statistics. Suppose also that 40% of college students are cool, although of the non-stats students, only 33% are cool.

a) What percent of stats students are cool?

b) What percent of cool students take stats?