STA 198F, Fall 2020: Probabilities Everywhere

Class activities for Week 4.

Class Poll Project: Which <u>one</u> of the following four questions should we use? "Have you ever broken a bone?" "Do you feel like you have become an adult?" "Do you think online classes are easier to manage than in-person classes?" "Do you like pineapple on pizza?"

Whole Class discussion: As a group, we will discuss last week's homework readings and questions. Be sure to participate actively, and raise your hand often!

"Gambler's Ruin" Mathematical Solution. (Continued from last week.)

Homework assignment (upload to Quercus by 2:30 PM before the next class):

Read the following parts of Chapters 10 and 11: From the fifth-last line of page 147 ("The Meaning of Polls") to the middle of page 149 ("... just as Truman's victory was established"); the entire section ("Poll Bias") from the top of page 154 to line 6 of page 157; and the first part of Chapter 11 from the top of page 163 (chapter beginning) to the middle of page 170 ("... you can do yourself"). While you read, consider and make notes about the following questions:

1. According to the book, what does a poll's "margin of error" really mean? What factors does it take into account? What factors does it not take into account?

2. Explain the "Dewey Defeats Truman" story. Had you heard of it before? Can you find a photo online which illustrates it? (If it's too inconvenient to include the photo with your answer, you can just provide a web link to it.)

3. What examples does the book give of ways in which polls may be biased?

4. Summarise the (fictional) story about "The Aging Skater", and explain what we can learn from it.

5. From a probability perspective, in what way is conducting a poll like flipping coins? In what way is it different?

6. What does the book claim is the "95% Range for Percentage of Heads when Flipping 10 Coins"? What does this mean? What about for 100 coins?

7. What formula does the book claim for the margin of error when flipping lots of coins? Do you understand how it was derived? How is it related to the "bell curve"? How is it related to the margin of error for polls?

8. Based on what you have learned so far about election polls, to what extent do you think polls can or cannot predict the results of an upcoming election? Explain.