

STA 198F, Fall 2020: Probabilities Everywhere

Class activities for Week 7

Group Election Exercise: In your small group, based on various election polls etc, come up with your best guess of the total percentage of the popular vote that will be won by each of the two main candidates in the upcoming November 3 U.S. presidential election.

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

Group “Craps” Exercise (continued from last week).

Homework assignment:

Read Chapter 12 from the beginning (page 176) to the middle of page 185 (ending with “but to create it”), and also the final page 192 (from “Dividing the Restaurant Bill” to the end). While you are reading, consider (and make notes about) the following questions.

1. What action does the book claim gives results that the CIA couldn't reproduce in a million years? Do you believe this? Do you find it surprising? Why or why not? What question from the first week of class is it related to? Does it give you any new perspective about your daily activities, and if so, what?
2. Explain the story of the million monkeys. Had you heard this before? Do you find it surprising? Why or why not? Also, watch this 17-second video; what TV show is it from? https://www.youtube.com/watch?v=no_e1VGGgW8
3. Explain the examples about Johnny Hooker, Rock/Paper/Scissors, and the World Series. Did you find them convincing? What do they all have in common?
4. Try playing Rock/Paper/Scissors against either the New York Times RPS robot at <http://probability.ca/RPS1> (on “Veteran” mode), or the Afiniti robot at <http://probability.ca/RPS2> (choose “PLAY THE GAME”, i.e. the “standard version”). Play at least ten rounds, and hopefully more. How did you do? And, how does your result affect your opinion about whether the game Rock/Paper/Scissors involves some skill, or is just pure luck? Explain.
5. From the section “Randomness and the Internet”, summarise at least two uses of randomness by computers. Do you find them surprising? Why or why not?
6. What are “pseudorandom numbers”, and why are they important?
7. Summarise the story “Dividing the Restaurant Bill”. Do you feel that the solution reached was fair? Why or why not? How is the solution related to the Law of Large Numbers? Have you ever considered using such a method in the past? Would you consider using such a method in the future?