

There are four problems from Chapter 2 and two additional problems, called A and B.

Exercise 2.3 (about STEM majors' rooming)

Exercise 2.4 (about $P(A \cup B)$)

Exercise 2.8 (about a paradox)

Exercise 2.15 (about Eduardo's test)

For Problems A and B, you are organizing volunteers to assist voters at polling sites. You have s sites to cover, one of which is St. James's Church. (In the USA, it is common to hold voting in churches.) You'd like to have at least one volunteer per site. However, your volunteers tend to be inexperienced and undisciplined. They don't respond to messages promptly. On election day, they just go to sites randomly.

These problems smell like birthday problems, but they can be solved in various ways.

A. In one election, you manage to recruit exactly s volunteers. What is the probability that you have a volunteer at every site?

B.A. For the next election, you have $2s$ volunteers. What is the probability that you have no volunteers at St. James's Church?

B.B. Nothing's really special about St. James's Church. You really want to know the probability that any site ends up with no volunteers. Is the answer simply s times the answer for B.A?

Epilogue: In November 2020, I volunteered with a non-partisan group to assist voters at polling places. It was chaos.