

Answer the questions below. You may answer in the space provided. You may use the back or a separate sheet of paper if you need more space. You are to work in groups of no more than four people. Make sure to enter the names of your groupmates below.

Name: _____

Section: _____

Group Members: _____

1. The university's administration needs to form a committee of three students for input on university affairs. The three students are chosen such that the three students form a simple random sample¹ of the student body. Assume that 40% of the students oppose some plan the administration has proposed. We also assume that the student body is large enough that the probability of any given student on the committee opposing the proposal is independent of any other student on the committee opposing the proposal.
 - (a) (1 point) What is the expected number of students on the committee who oppose the proposal?

 - (b) (2 points) What is the probability that a majority of the committee opposes the proposal?

2. (3 points) A government survey found that 27% of households had one member, 33% had two members, 16% had three members, 14% had four members, 6% had five members, 3% had 6 members, and 1% had seven members. What are the mean and standard deviation of the number of members of a household?

3. The number of typos on a page of a book of 200 pages is Poisson distributed with a mean of 0.1
 - (a) (1 point) What is the probability that a given page has no typos?

 - (b) (3 points) How many pages with typos are expected in the book?

¹A sampling technique produces a simple random sample (SRS) of size n if each member of the population is equally likely to be chosen and each sample of size n is equally likely to be chosen. We will discuss this next week.