Name:

MATH 320: In-Class 10

Assume that 18% of people are left handed. Answer the following questions based on each described experiment.

1. Suppose we select 9 people at random. Let X be the number of lefties selected out of the 9 people.

   (a) Find the probability there are exactly 4 lefties.

   (b) Find the probability there are at least 6 lefties.

   (c) Find the probability there are is a majority of righties.

   (d) How many lefties do you expect in the group? With what standard deviation?

   (e) Suppose there are less than 4 lefties in the group. Find the probability there are exactly 2 lefties?

2. Suppose we select people at random until the first lefty is selected. Let Y be the number of people selected in order to select the first lefty.

   (a) Find the probability the first lefty is the 5^{th} person.

   (b) Find the probability the first lefty is before the 7^{th} person.

   (c) Find the probability the first lefty is the 3^{rd} through 6^{th} person.

   (d) How many people do you expect to select until the first lefty? With what standard deviation?

   (e) Suppose the first 5 people were righties, find the probability the first 9 people are righties.