EE 381, Quiz 6 (The Last Quiz!) - 10 points Due Monday 5/3/21, 11:00 a.m.

Name, I.D. # and Date: _____

Instructions: Unlike your previous 5 quizzes this quiz is not online. This is a take-home quiz. You can work with other persons on this quiz. Submit this quiz to the dropbox labeled quiz 6 in your seminar section. The two problems (5 points each) below provide data and a proposed probability distribution. Use the goodness of fit test to see whether or not the proposed distribution is credible. Attach a sheet of paper to this quiz with your work. Either take a picture or make a PDF to submit to dropbox, 5/3/21.

1.) Frequency distribution data is given in the table below. It is proposed that the data comes from a binomially distributed random variable with a probability of success equal to 1/3.

Number of successes	0	1	2	3	Total
Observed frequency	89	133	52	26	
Expected frequency					

Hint, a) For a binomial random variable with parameters n = 3 and p = 1/3 calculate the binomial probabilities for 0, 1, 2, 3.

Hint, b) Use the probabilities you calculated to determine the expected frequencies.

Perform a goodness of fit test with a 5% level of significance. Do the observed frequencies fit the proposed distribution?

2.) A person asserts that the data in the table below is from a sample taken from a normal distribution with a mean of 100 and a standard deviation of 15.

Category	X < 80	80 < X < 95	96 < X < 110	111 < X < 120	120 < X	Total
Observed Frequency	20	20	80	40	40	
Expected Frequency						

Hint, a) On the horizontal axis for a normal random variable make four tick marks at 79.5, 95.5, 110.5, and 120.5. Calculate the probabilities for the five categories.

Hint, b) Use the probabilities you calculated to determine the expected frequencies.

Perform a goodness of fit test with a 1% level of significance. Do the observed frequencies fit the proposed distribution?