EE 381 Homework 5 Part 1

Name, I.D. #, and Date: _____

Instructions: Attempt each exercise and show your work. You can attach pages to your submission. Submit this part of homework 5 with the additional parts of homework 5 to dropbox (laboratory section) on April 27. You may want to make copies of your work.

1.) A. C. Neilsen reported that children between the ages of 2 and 5 watch an average of 25 hours of television per week. Assume the variable is normally distributed and the standard deviation is 3 hours. If 20 children between the ages of 2 and 5 are randomly selected, find the probability that the mean of the number of hours they watch television will be greater than 26.3 hours.

2.) The average age of a vehicle registered in the United States is 8 years, or 96 months. Assume the standard deviation is 16 months. If a random sample of 36 vehicles is selected, find the probability that the mean of their ages is between 90 and 100 months.

3.) The average number of pounds of meat that a person consumes per year is 218.4 pounds. Assume that the standard deviation is 25 pounds and the distribution of the variable is normal.

a.) Find the probability that a person selected at random consumes less than 224 pounds per year.

b.) If a sample of 40 individuals is selected, find the probability that the mean of the sample will be less than 224 pounds per year.