King Fahd University of Petroleum & Minerals
Department of Mathematics & Statistics
STAT-319-Term122
Quiz #3

Name: ID: Serial:

Q 1: The travel time experienced by a driver going from Al – Dammam to Al – Riyad can be viewed as normally distributed random variable with a mean 3.5 hours and a standard deviation of 0.45 hours.
Consider an experiment involving the measurement of the travel time of 50 different randomly and independently selected drivers going from Al – Dammam to Al – Riyad.

a. What is the expected number of drivers in this sample who will have experienced a travel time in excess of 4 hours? What is the standard deviation?

b. Approximate the probability less than 24 drivers out of the 50 drivers who experience a travel time in excess of 4 hours.

Q 2: A manufacturer claims that the average life of its light bulb is 1,200 hours. Assume that the life of all such bulbs has a normal distribution with mean 1,200 hours, and standard deviation 70 hours. Determine the probability the mean life time of a random sample of 9 bulbs will be at least 1,180 hours

Q 3: An article in the Journal of the American Statistical Association measured the weight of rats under experiment controls.

a. How large must the sample be if you wish to be at least 95% confident that the error in estimating the percentage of underweight rats is less than age was observed?

b. Calculate a 95% confidence interval on the true proportion of rats that would underweight?