

King Fahd University of Petroleum & Minerals

Department of Mathematics & Statistics

STAT-319-Term172

Quiz-3

Name:

ID:

Serial:

Q 1: A recent study in Riyadh has concluded that the distance that workers daily travel to work averages 19.3 km with a standard deviation of 5.6 km. Assuming these values correspond to the parameters of a normal population,

1. What is the probability that a worker will travel less than 20 km?
2. What is the probability that a sample of 49 yields an average travel distance less than 20 km?
3. What is the value of the sample mean such that 97% of the mean above this value?

Q 2: A manufacturer claims that the average life of its light bulb is 1,200 hours. Determine the probability the mean life time of a random sample of 49 bulbs will be at least 1,180 hours

Q 3: The life time in hours of a semiconductors laser has a lognormal distribution with $\theta = 10$ & $\omega = 1.5$.

1. What is the probability that the lifetime is more than 10000 hours?
2. What lifetime is exceeded by 99% of lasers?