King Fahd University of Petroleum & Minerals
Department of Mathematics & Statistics
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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 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 a mean 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?