KFUPM | Term 162 | Date: 26/3/2017

Math & Stat Dept. | STAT 319 | Duration: 20 minutes

Quiz #2

Name: ID#: Section 4 Serial

Q1: A company modeled the lifetimes of the electromagnetic valve used for starting the idle-up actuator of an air conditioner by an exponential distribution with a rate of 0.05 failures per million revolutions. Consider a randomly selected electromagnetic valve. What is the number of revolutions after which 10% of the electromagnetic valves fail?

Q2: The length of an injected-molded plastic case that holds magnetic tape is normally distributed with an average length of 90.2 mm and a standard deviation of 0.1 mm. If a ***total*** of **5%** of the shortest and the longest parts are scrapped, what are the ***minimum*** and ***maximum*** acceptable lengths of the injected-molded plastic case?

Q3: The manufacturing of semiconductor chips produces 2% defective chips. Assume the chips are independent and that a lot contains 1000 chips. Approximate the probability that ***more*** than **25** chips are defective.

P.T.O. →

Q4: The accompanying data show the single-leg power at a high workload.

244 191 160 187 180 176 174 205 211 183

1. Find:
   a. The mean

   b. The standard deviation

   c. The lower quartile

   d. If the z-score is defined as $z = \frac{x - \bar{x}}{s}$, then find the z-scores for the maximum observation.

2. Construct a frequency table with class width 20, and starting at the minimum.

With My Best Wishes