

STAT-319-Term 162-Sec.02

Quiz #4

Name:

ID

Q 1: Hard disks for computers must spin evenly, and one departure from level is called a roll. The roll for any disk can be modeled as a random variable having mean 0.2250 mm and standard deviation 0.0042 mm. The sample mean roll will be obtained from a random sample of 40 disks.

a. What is the sampling distribution of the sample mean?

b. What is the probability that the sample mean lies between 0.2240 and 0.2255?

Q 2. An electrical firm manufactures light bulbs that have a length of life that is normally distributed with standard deviation of 40 hours. If a sample of 30 bulbs has an average life of 780 hours,

- a. Find a 96% confidence interval for the population mean of all bulbs produced by this firm. Interpret your result.

- b. How large a sample is needed if we wish to be 96% confident that our sample mean will be within 10 hours of the true mean