ENGR 0020 PROB & STAT FOR ENGINEERS I

Recitation 8

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Office Hour: Thursday 2:00 – 3:00pm, 1023 Benedum Hall

Goals:

1. To help to understand the lecture and homework questions.
2. To take quizzes for getting the feedback of the class. The quizzes will take 10 mins at the end of recitation.

1. **(Estimating the mean, Confidence interval with σ^2 known; Exercise 9.2, p282)** An electrical firm manufactures light bulbs that have a length of life that is approximately normally distributed with a standard deviation of 40 hours. If a sample of 30 bulbs has an average life of 780 hours, find a 96% confidence interval for the population mean of all bulbs produced by this firm.
2. **(Determine the size of sample; Exercise 9.6, p283)** How large a sample is needed in the first exercise if we wish to be 96% confident that our sample mean will be within 10 hours of the true mean?
3. **(Estimating the mean, Confidence interval with σ^2 unknown; Exercise 9.10, p283)** A random sample of 12 graduates of a certain secretarial school typed an average of 79.3 words per minute with a standard deviation of 7.8 words per minute. Assuming a normal distribution for the number of words typed per minute, find a 95% confidence interval for the average number of words typed by all graduates of this school.
4. **(Prediction interval with σ^2 unknown; Exercise 9.16, p283)** Consider the data in the third exercise. Compute the 95% prediction interval for the next observed number of words per minute typed by a graduate of the secretarial school.