ENGR 0020 PROB & STAT FOR ENGINEERS I

Recitation 6

Teaching Assistant: Shaoning Han
Email: shaoning.han@pitt.edu
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. **(Binomial Distribution; Exercise 5.16, p151)** Suppose that airplane engines operate independently and fail with probability equal to 0.4. Assuming that a plane makes a safe flight if at least one-half of its engines run, determine whether a 4-engine plane or a 2-engine plane has the higher probability for a successful flight.
2. **(Hypergeometric Distribution; Exercise 5.33, p157)** If 7 cards are dealt from an ordinary deck of 52 playing cards, what is the probability that
   (a) exactly 2 of them will be face cards?
   (b) at least 1 of them will be a queen?
3. **(Poisson Distribution and Exponential Distribution)** On average, 3 traffic accidents per month occur at a certain intersection. What's the probability that the next accidents occurs within time t?
4. **(Normal Distribution; Exercise 6.20, p187)** The weight of a large number of miniature poodles are approximately normally distributed with a mean of 8 kilograms and a standard deviation of 0.9 kilogram. If measurements are recorded to the nearest tenth of a kilogram, find the fraction of theses poodles with weights between 7.3 and 9.1 kilograms inclusive.