KING FAHD UNIVERSITY OF PETROLEUM & MINERALS
DEPARTMENT OF MATHEMATICS & STATISTICS
DHAHRAN, SAUDI ARABIA
STAT 319: Probability & Statistics for Engineers & Scientists
Semester 163, Quiz 2
Monday July 24, 2017

Name:　　　　　　　　　　　　　　　　　　　　　ID #:

Q.No.1: - Jeremy sells a magazine which is produced in order to raise money for homeless people. The probability of making a sale is, independently, 0.09 for each person he approaches. Given that he approaches 40 people, find the probability that he will make 2 or fewer sales;

Q.No.2: - A manufacturing firm employs three analytical plans for the design and development of a particular product. For cost reasons, all three are used at different times. In fact, plans 1 and 2 are used for 30% and 20% of the products, respectively. The defect rate for the plans 1, 2, and 3 are 1%, 3%, and 2% respectively. If a random product was observed and found to be defective, what is the probability of plan 2 to be responsible for the defect?

Q.No.3: - The lifetime of a particular integrated circuit has an exponential distribution with mean 2 years.

    (a) Find the probability that the circuit lasts longer than three years.

    (b) Assume the circuit is now four years old and is still functioning. Find the probability that it functions for more than three additional years.

    (c) What is the specific name of the property you observed in part (b).

Q.No.4: - A warehouse contains ten printing machines, four of which are defective. A company selects five of the machines at random, thinking all are in working condition.

(a) What is the probability that all five of the machines are non-defective?

(b) If we know that there are at most three defectives, what is the probability of having at least one defective?

With the Best Wishes