
KING FAHD UNIVERSITY OF PETROLEUM & MINERALS
DEPARTMENT OF MATHEMATICS & STATISTICS
DHAHRAN, SAUDI ARABIA

STAT 319: Probability & Statistics for Engineers & Scientists

Semester 163, Quiz 1

Sunday July 23, 2017

Name:

ID #:

Q.No.1: - Hydraulic landing assemblies coming from an aircraft rework facility are each inspected for defects. Historical records indicate that 6% have defects in shaft, 4% have defects in bushings, and 2% have defects in both shafts and bushings. One of the hydraulic assemblies is selected randomly. What is the probability that the assembly has no bushing defect when it is known that there was no shaft defect?

Q.No.2: - On the average, 1 computer in 800 crashes during a severe thunderstorm. A certain company had 4,000 working computers when the area was hit by a severe thunderstorm.

a) Compute the expected value and variance of the number of crashed computers.

b) Compute the probability that exactly 10 computers crashed.

Q.No.3: - A lab network consisting of 10 computers was attacked by a computer virus. This virus enters each computer with probability 0.4, independently of other computers.

a) Find the probability that the virus enters at least 3 computers.

b) A computer manager checks the lab computers, one after another, to see if they were infected by the virus. What is the probability that he has to test at least 2 computers to find the first infected one?