Assignment 05

MA260 Statistical Analysis I

**Directions: Be sure to save an electronic copy of your answer before submitting it to Ashworth College for grading. Unless otherwise stated, answer in complete sentences, and be sure to use correct English, spelling, and grammar. Refer to the "Assignment Format" page located on the Course Home page for specific format requirements.**

**NOTE:** Show your work in the problems.

1. Compute the mean and variance of the following discrete probability distribution.

|  |  |
| --- | --- |
| ***x*** | ***P(x)*** |
| 2 | .50 |
| 8 | .30 |
| 10 | .20 |

2. The Computer Systems Department has eight faculty, six of whom are tenured. Dr. Vonder, the chair, wants to establish a committee of three department faculty members to review the curriculum. If she selects the committee at random:

a. What is the probability all members of the committee are tenured?

b. What is the probability that at least one member is not tenured? (Hint: For this question, use the complement rule).

3. New Process, Inc., a large mail-order supplier of women’s fashions, advertises same-day service on every order. Recently, the movement of orders has not gone as planned, and there were a large number of complaints. Bud Owens, director of customer service, has completely redone the method of order handling. The goal is to have fewer than five unfilled orders on hand at the end of 95% of the working days. Frequent checks of the unfilled orders follow a Poisson distribution with a mean of two orders. A Poisson distribution is a discrete frequency distribution.

Has New Process, Inc. lived up to its internal goal? Cite evidence.

4. Recent information published by the U.S. Environmental Protection Agency indicates that Honda is the manufacturer of four of the top nine vehicles in terms of fuel economy.

a. Determine the probability distribution for the number of Hondas in a sample of three cars chosen from the top nine.

b. What is the likelihood that in the sample of three at least one Honda is included?

**Grading Rubric**

*Please refer to the rubric below for the grading criteria for this assignment.*

