**Discussion 5**

**CHAPTER 5: DISCRETE PROBABILITY DISTRIBUTIONS**

1. Which of the following about the binomial distribution is **not** a true statement?

a) The probability of the event of interest must be constant from trial to trial.

b) Each outcome is independent of the other.

c) Each outcome may be classified as either "event of interest" or "not event of interest."

d) The variable of interest is continuous.

1. In a binomial distribution

a) the variable *X* is continuous.

b) the probability of event of interest is stable from trial to trial. π

c) the number of trials *n* must be at least 30.

d) the results of one trial are dependent on the results of the other trials.

1. Whenever π = 0.5, the binomial distribution will

a) always be symmetric.

b) be symmetric only if *n* is large.

c) be right-skewed.

d) be left-skewed.

1. Whenever π = 0.1 and n is small, the binomial distribution will be

a) symmetric.

b) right-skewed.

c) left-skewed.

d) None of the above.

1. If n = 10 and π = 0.70, then the mean of the binomial distribution is

a) 0.07

b) 1.45.

c) 7.00

d) 14.29

1. If n = 10 and π = 0.70, then the standard deviation of the binomial distribution is

a) 0.07

b) 1.45

c) 7.00

d) 14.29

1. If the outcomes of a variable follow a Poisson distribution, then their

a) mean equals the standard deviation.

b) median equals the standard deviation.

c) mean equals the variance.

d) median equals the variance.

1. A professor receives, on average, 24.7 e-mails from students the day before the midterm exam. To compute the probability of receiving at least 10 e-mails on such a day, he will use what type of probability distribution?

a) binomial distribution.

b) Poisson distribution.

c) all of the above.

d) none of the above.

1. A company has 125 personal computers. The probability that any one of them will require repair on a given day is 0.025. To find the probability that exactly 20 of the computers will require repair on a given day, one will use what type of probability distribution?

a) binomial distribution.

b) Poisson distribution.

c) all of the above.

d) none of the above.

**SCENARIO 5-3**

The following table contains the probability distribution for X = the number of retransmissions necessary to successfully transmit a 1024 K data package through a network.



1. Referring to Scenario 5-3, the probability of no retransmissions is \_\_\_\_\_\_\_\_.

ANSWER:

1. Referring to Scenario 5-3, the probability of at least one retransmission is \_\_\_\_\_\_\_\_.

ANSWER:

1. Referring to Scenario 5-3, the mean or expected value for the number of retransmissions is \_\_\_\_\_\_\_\_.

ANSWER:

1. Referring to Scenario 5-3, the variance for the number of retransmissions is \_\_\_\_\_\_\_\_.

ANSWER:

1. Referring to Scenario 5-3, the standard deviation of the number of retransmissions is \_\_\_\_\_\_\_\_.

ANSWER: