Name:_____

Chapter 4 Test Review

Determine whether the variable is discrete or continuous.

1. The numbers of cups of coffee sold in a cafeteria during lunch.

2. The temperature in Juneau, Alaska today.

3. The speed of a car on the freeway during rush hour.

4. The number phone calls to the attendance office of a high school on any given day.

Determine whether the distribution represents a probability distribution.

5. $x = 3, 6, 9, 12, 15$ and $p(x) = 1.2, 1.2, 1.4, 1.1, 1.1$

6. $x = 1, 2, 3, 4, 5$ and $p(x) = .49, .05, .32, .07, .07$

Construct a distribution table.

7. Flipping a coin 3 times and keeping track of the tails.

8. If five people go to the store and 20% of those people purchase a can of pop.

Find the expected value.

9. A twenty-five year old man decides to pay $325 for a one-year life insurance policy with coverage for $1,000,000. The probability of him living through the year is 0.9995.

10. One thousand tickets are sold at $1 each. One ticket will be randomly drawn and the winner will receive a color television valued at $350.

Find the mean and standard deviation.

11. $x = 0, 1, 2, 3, 4$ $p(x) = .125, .428, .256, .108, .083$

12. x = 0, 1, 2, 3, 4 p(x) = .03, .28, .41, .26, .02,

Determine whether the experiment is a binomial distribution experiment.
    13. You observe the gender of 100 babies being born.

    14. You roll a die 100 times and record the number that appears on each roll.

Find the probability.
    15. Assume that male and females are equally likely and that the birth of any child does not affect the probability of the gender. Find the probability of exactly four boys in ten births.

    16. Refer back to problem 15, but find the probability of at most three boys.

    17. A survey found that 70% of all adults over 50 wear glasses for driving. In a random sample of 10 adults over 50, what is the probability that at least 6 wear glasses?

    18. According to government data, the probability that an adult was never married is 15%. In a random survey of 10 adults, what is the probability that at least eight were married?

Mean and Standard deviation.
    19. A test that consist of ten true or false questions.

    20. Ten multiple-choice questions, each with five possible answers, only one that is correct.

    21. In a recent survey, 80% of the community favored building a police station in their neighborhood. If 15 citizens are chosen, what is the mean and standard deviation?

22. The probability that a tennis set will go to a tiebreaker is 15%. In 20 randomly selected tennis sets, what is the mean and standard deviation?

23. Several students are unprepared for a true/false test with 20 questions, and all the answers are guesses. Would it be unusual for a student to pass by guessing and getting at least 12 correct answers? Why or why not?

24. Several students are unprepared for a multiple-choice quiz with 20 questions, and all of their answers are guesses. Each question has five possible answers, and only one of them is correct. Would if be unusual for a student to pass by guessing and getting at least 12 correct answers? Why or why not?

Poisson distribution.
25. Sports Scores Hot Line receives, on the average, eight calls per hour requesting the latest sports scores. The distribution is Poisson in nature. For any randomly selected hour find the probability that the company will receive 10 calls.

26. Using the information from problem 25, what is the probability the station will receive at least two calls?

27. Using the information from problem 25, what is the probability the station will receive no more than three calls?