Statistics 4.2/4.3 Review for Quiz Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**For questions 1 and 2, decide whether each experiment is a binomial experiment. If it is not, explain why. If it is, identify n, p, q, and the values of the random variable x..**

1. Bags of plain M & M’s contain 24% blue candies. One candy is selected from each of 12 different bags. The random variable represents the number of blue candies selected.

2. A fair coin is tossed repeatedly until 15 heads are obtained. The random variable counts the number of tosses.

**Find the indicated probabilities. Use the formula or the shortcut on the graphing calculator. Decide if each experiment is binomial, geometric or Poisson. Then find each probability.**

3. At one company, the average employee took 7 sick days in the last year. Find each probability.

a) That an employee chosen at random will take more than 7 sick days next year.

b) That an employee chosen at random will take less than 7 sick days next year.

c) That an employee chosen at random will take exactly 7 sick days next year.

4. One in four adults is currently on a diet. In a random sample of eight adults, what is the probability that the number currently on a diet is:

a) exactly 3? b) at least 3? c) no more than 3?

d) What is the mean, variance, and standard deviation of this binomial probability distribution? (We have formulas for that from 4.2. Look them up!!!)

5. In a typical day, 31% of people in the U.S. with internet access go online to get news. You ask people in the U.S. with internet access if they go online to get news. Find the probability that the first person who says yes is:

a) the second person you ask. b) before the 5th person. c) at least the 3rd person.

6. 76% of college students in Michigan receive financial aid. You go to a college campus and select 15 students at random. Find the probability that the number who receive financial aid is:

a) less than 10? b) exactly 8? c) more than 9?

7. The average number of tardies per student in Ms. O’Rourke’s classes is 3.5. Find each probability.

a) That a randomly chosen student has exactly 6 tardies.

b) That a randomly chosen student has less than 4 tardies.

c) That a randomly chosen student has at least 3 tardies.

8. 12% of people surveyed claim they just watch the Super Bowl for the commercials. You ask people if they watch the Super Bowl for commercials. Find the probability that the first person that says yes is:

a) after the 3rd person. b) at most the 4th person. c) the 2nd person.

9. The average amount of snowfall in January for Dearborn is 10 inches. (I did not even make this one up.) Find each probability.

a) That there is more than 15 inches of snow this January.

b) That there is exactly 8 inches of snow this January.

c) That there is at most 10 inches of snow this January.