**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Statistics I, Quiz #4**

A survey was conducted of students’ residences. Data was gathered from a random sample of 1000 students. The data is summarized in the table below.

|  |
| --- |
| **Gender and Residence of Students** |
|  | **Males** | **Females** |
| **Apartment off campus** |  50 |  90 |
| **Dorm room** | 150 | 210 |
| **With Parent(s)** | 100 |  50 |
| **Sorority/ Fraternity House** | 200 | 150 |

**Start with fractional probabilities, convert to decimals, and round final answers to three decimal places.**

1.) What is the probability that a student is female **and** lives in a dorm?

The probability of female students living in Dorm room = 210

Total students = 1000

P(female at dorn) = 210/1000

 = 0.210

2.) What is the probability that a student is female **given** that she lives in a dorm?

  The probability of female students living in Dorm room = 210

P(female at dorn) = 1/210

 = 0.004

3.) What is the probability that a student lives in a dorm **given** that she is a female?

 Total female students living in a dorn = 210

 Total female students = 500

 P(female student living in dorn) = 210/500

 = 0.420

4.) What is the probability that a student lives in a dorm **or** an apartment off campus?

 Total students living in dorn = 360

 Students living in Apartments = 140

 Probability= 140/1000

 = 0.140

**The exercises on the back page relate to the binomial probability distribution. You will need to obtain your answers from MS Excel.**

**Round final answers to three decimal places.**

**For each question, you may want to show the data you enter into Excel for partial credit.**

* number of success
* number of trials
* probability of success
* cumulative probability (true or false) ?

A recent report shows that 80% of elementary school teachers have a computer at home. 12 elementary school teachers are randomly selected.

5.)Find the probability that exactly 10 of them have a home computer.

 Probability = 10/12

 = 0.8333

6.) Find the probability that 8 or less have a home computer.

 P = 8/12

 P = 0.666

 P is less or equal to 0.666

7.)Find the probability that 12 or fewer have a home computer.

 P = 12/12

 Probability is equal or less than 1.000

8.) Find the probability that 7 or more have a home computer.

 P = 7/12

 P = 0.583

 Probability is equal to 0.583 or more.

9.)Find the probability that 9 **or** 10 have a home computer.

 P= 9/12

 P = 0.750

 P= 10/12

 P= 0.833

 For 9 the probability is 0.750 and for 10 it will be 0.833