Name: _____

Normal Distribution Worksheet

Using the *Introductory Statistics Notes*, answer the following questions:

1. What is the definition of a density curve?

2. What is the normal distribution?

3. How is the normal distribution described?

4. What is the standard normal curve?

Using the textbook, answer the following questions:

1. On page 80, what are the properties of a density curve?

2. On page 82, what is the difference between the median and mean of a density curve?

Group Activity 1 – Using R and the rnorm function, simulate 1000 standard normal variables. Assign these variables to X. Then find the following:

1) What is the population mean of the above distribution? _____

2) What is the sample mean? _____

3) Are they similar, different, or the same (compare 1 & 2)? _____

4) What percentage of the random variables fall below the population mean? _____

5) How do you define the above distribution? Hint: N(,   )

6) What percentage of observations fall between +/- 1 standard deviation from the mean? _____

7) What percentage of observations fall between +/- 2 standard deviations from the mean? _____

8) What percentage of observations fall between +/- 3 standard deviations from the mean? _____

9) Find the value that is 1 standard deviation below the mean, what percentage fall below this value? _____