**MAT1372**

**Project #3**

**Due Date: Thursday, March 13, 2014**

**Maximum points on this project: 10 points**

Submit **one** EXCEL file: FirstName LastName-Project 3-MAT1372-Sp2014

Submit by the due date to: shan@citytech.cuny.edu

To get full credits for the project, you must:

1. Turn in the project on time. One point will be deducted for “each day” (including weekends and holidays) that the project is late.
2. State the goal (or the problem) of the project.
3. State the process, including EXCEL commands used.
4. State the results.
5. Simulate the experiment of tossing a coin 1000 times on Microsoft Excel. Use the random number generating function “=randbetween(0,1)” to randomly generate numbers 0 and 1. Let “1” represent “Head” and “0” represent “Tail”. Do this 1000 times to simulate 1000 coin tosses. Record the result and find the frequency of getting “Head” by adding all the “1’s” or using the “bins and frequency” or “countif” commands. Find the probability of getting “Head” based on the simulation result. Does the result agree with the theoretical probability of getting a “Head” is 1/2 ? How do you explain the result of simulation?
6. Simulate the experiment of tossing 10 coins 1000 times on Microsoft Excel. Use the same random number generating function as in #1, but do this over 10 columns 1000 times. Record the number of heads for each toss of 10 coins by adding all the “1’s”. Based on the result of the simulation, find the probability of getting zero head, 1 head, 2 heads, …, 10 heads using “bins and frequency” or “countifs” commands. Graph the probabilities on a bar graph. What type of distribution do you get?
7. Simulate the experiment of tossing a pair of dice 1000 times on Microsoft Excel using the function “=randbetween(1,6)”. Find the sum of the two dice. Find the frequency and the probability that the sum of two dice is “sum = 2, 3, 4, …, 12” using “bins and frequency” or “countifs” commands.