Part I:

In this assignment, you will simulate values from two different normal distributions. In the first, you will choose the mean, while in the second, you will choose both the mean and standard deviation. Do not tell others what values you used. We will use these in class next Week.

1. Pick any number you would like for μ. You should choose a value that will be difficult for others to guess (non-integer). Simulate 10 values from a normal distribution with mean μ and standard deviation $\sigma = 5$, using the following steps in JMP.
>   1. In a JMP data table, label the first column x.
>   2. Choose Rows → Add Rows and add 10 rows to your datatable.
>   3. Right-click on column x and choose Formula.
>   4. From the Random menu, choose Random Normal. In the parentheses, enter your value of μ and the value of 5 for σ. For example, if I had chosen $\mu = 3.14159$, I would enter :

Random Normal[3.14159 , 5]

>   5. Click OK. Column 1 should now contain 10 simulated values from a normal distribution with mean μ of your choice and standard deviation $\sigma = 5$.

2. Create a second column in your JMP spreadsheet and call it Y. This time choose values for both μ and σ. Your choice for μ should be different than in #1. Recall that standard deviation must be positive, so choose $\sigma > 0$. Repeat the steps above to simulate 10 values for Y from the normal distribution with your chosen mean and standard deviation.

3. Upload your JMP spreadsheet, containing columns X and Y to Blackboard by **noon on Monday, February 20, 2017.**

4. Send me an email (ajsage@iastate.edu) containing:
   a) The value you used for μ in #1.
   b) The values you used for μ and σ in #2.

Part II:

Work in teams of 2-3 students.

Names of Group Members:

The file "Part1_Data.jmp" contains each student's dataset for the first part of part 1. Data were generated using a normal distribution with unknown mean μ and standard deviation 5.

Directions: For each dataset, give a range of values that you believe contains the value of μ that was used to generate the data. The goal is to find as narrow a range as possible, that does truly contain the unknown μ. Your answers will be scored as follows:

1. If your interval contains the true μ score is width of your interval.
2. If your interval does not contain μ score is 50.
3. Your worst (highest scoring) 2 intervals will be dropped.
4. Lowest total score after the 2 drops wins.

Fill in the values in the spreadsheet labeled Part2_Answers. Upload this file to Blackboard before the end of class.

Describe your strategy for determining an appropriate range of values below.

Part III:

Work in teams of 2-3 students.

Names of Group Members:

Directions: For each dataset, give a range of values that you believe contains the value of μ that was used to generate the data. The goal is to find as narrow a range as possible, that does truly contain the unknown μ. Your answers will be scored as follows:

1. If your interval contains the true μ score is width of your interval divided by the true (unknown) σ.
2. If your interval does not contain μ score is 10.
3. Your worst (highest scoring) 2 intervals will be dropped.
4. Lowest total score after the 2 drops wins.

Fill in the values in the spreadsheet labeled Part3_Answers. Upload this file to Blackboard before the end of class.

Describe your strategy for determining an appropriate range of values below.