**Review Problems from Today’s (10/03/2017) class:**

1. Use pen/pencil to draw a histogram with these numbers:

-1, -1.5, -0.5, 0, 0, 0, 0.5, 1, 2, 2.5, 3.0, 4.0, 4.5

1. Write the formula for sample variance from memory.
2. What is the definition of an outlier(according to Stanford OLI) in a group of numbers.
3. Label all the parts of the following distribution and name it:



1. Propose an algorithm to detect outliers in a scatter plot:
2. Enumerate the sample space (alongwith the mathematical formula) for the following experiments:
3. A couple decides to have babies until they get two girls. They stop after 4 kids.
4. Acoin is tossed ten times or until 3 heads appear.
5. What is the probability that nobody in a group of 7 people has the same birthday?
6. What is the probability that atleast two people in a group of seven share the same birthday?
7. Explain how to calculate the best fitting line describing the relationship between two variables. What does it mean for a line to be “the best-fitting”?
8. Let’s make a deal problem: Out of ten doors, Ana chose door number 7 to win the prize money. To help Ana out, the host revealed that the money was not behind doors 1,2,3,4,5 and 6. Find the probability that the prize money is behind:
9. Ana’s door after the reveal
10. Door number 10 after the reveal.

Based on your answer, should Ana switch doors to improve her chance of winning the money?