

**A.P. Statistics**  
**Assignment 4.1**

**Remember to show your thinking through your work.**

- 1) Probability is a measure of how likely an event is to occur. Match the probabilities below with each statement.

0                      0.01                      0.3                      0.6                      0.99                      1

- a) The event is impossible, it would never occur.
- b) The event is certain, it would always occur.
- c) The event is highly unlikely, but it will occur once in a while.
- d) The event will occur more often than not.
- 2) In a table of random digits, each digit is to occur with a probability of 0.1.
- a) A student examines a list of 200 random digits and counts only eleven 4's and thus claims that the table is not really random. Explain the error in the student's thinking.

- b) How many 7's would you expect to find in a random digit table consisting of 1000 digits.

- 3) In reading a book about the game of poker, you find that the probability of being dealt three of a kind (when dealt five cards) is about  $1/50$ . Explain in simple terms what this means.

4) The chance of a white Christmas (defined as at least one inch of snow on the ground) in Spokane is approximately 60%. Run simulations for each of the following.

a) Run a simulation for 10 years and record how many times a white Christmas occurs. Describe and record your results below.

b) Repeat the above simulation 9 more times. Record your results below.

c) Compare your results with the 60% theoretical probability and comment.