

NAME(S) _____

Virtual Lab Activity: Properties of the Binomial Distribution

[The Virtual Laboratory for Probability and Statistics was developed by Dr. Kyle Siegrist at UAH.]

Go to www.math.uah.edu/stat/

- Select 11. Bernoulli Trials
2. The Binomial Distribution

Turn in:

- #4 Observe the changes in the shape of the distribution for different values of n and p . Why is p called the “shape parameter”?

For $n = 10$, $p = .7$ and at least 1000 runs, record the following. Runs _____

X	Distribution	Data
0		
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
Mean		
SD		

- #10 Solve Pepys’ Problem: Are you more likely to get at least one ace in 6 rolls of a die or at least two aces in 12 rolls of a die? State which outcome is more likely and justify your answer by using the simulation to calculate the probability of each event. (Remember to change the random variable from the default $Y = \text{sum}$ to $Z = \text{number of aces}$.)

- #11 Solve Pepys’ Problem using the binomial probability formula.