Lab Report: Discrete Random Variable – Binomial

Name(s):

Key Terms

Provide the definitions for the following terms:

- random variable
- probability distribution function
- expected value
- Law of Large Numbers
- binomial probability distribution
- Bernoulli Trial

Binomial Simulation

Empirical probabilities of number of correct answers in a five-question multiple-choice quiz

x = Number of correct answers in a quiz	Frequency	$P(X = x)$ = Relative Frequency = Empirical Probability
0		
1		
2		
3		
4		
5		

Calculate the following:

Sample Mean ($\bar{x}$)	
Sample Standard Deviation (s)	

Binomial Probabilities

Theoretical probabilities of number of correct answers in a five-question multiple-choice quiz

(Copy-paste the binomial probability table generated by Statcato here):

Calculate the following:

Binomial Probability Distribution Mean (μ)	
Binomial Probability Distribution Standard Deviation (σ)	

Discussion

1.

Probabilities	Empirical	Theoretical
P(no questions right)		
P(at least one question right)		
P(no more than two questions right)		
P(two to four questions right)		
P(all questions right)		

2.

3.

4.