MATH 2510 NAME _____
Quiz 5 Section _____

Please make sure to show your work. If you use a function in your calculator to derive the answer, please write what was entered into your calculator and the output of the function that you used.

On my honor, as a University of Colorado at Boulder student, I have neither given nor received unauthorized assistance on this work.

SIGNATURE:_____

1) The random variable x represents the number of credit cards that adults have along with the corresponding probabilities.

x	P(x)
0	0.05
1	0.67
2	0.22
3	0.04
4	0.02

a) (2 point) What is the probability that an adult has **at least** two credit cards?

c) (3 points) What are the **mean** and **standard deviation** of this probability distribution?

2) (5 points) For one of the experiments described below the binomial experiment model can be used, for the other two the binomial experiment model cannot be used. For the experiment for which the binomial model is appropriate, compute the requested probability, and for the other two explain why the binomial model cannot be used.

a) From a box of 40 marbles (18 purple, 14 red, and 8 green) 4 marbles are selected one at a time without replacement. What is the probability that exactly 1 of the 4 marbles is red?

b.) There are 4 identical boxes of marbles. Each box contains 40 marbles (18 purple, 14 red, and 8 green) . One marble is selected at random from each box. What is the probability that exactly 1 of the 4 marbles is red?

c.) There are 4 identical boxes of marbles. Each box contains 40 marbles (18 purple, 14 red, and 8 green) . One marble is selected at random from each box. What is the probability that exactly 1 of the 4 marbles is red, and the rest are purple?

1) a) 0.22+ 0.04+ 0.02
   b) I can't easily generate the correct answers in this program...so, you will have to use 1–Var Stats on your own....
2)
   a) Not binomial: the trials are not independent.
   b) binompdf(4, 12/40, 1)
   c) Not binomial; the experiment is not defined with q = 1–p.