Stat 185 - Quiz3
Friday, October 6

Name:_____

Please write complete solutions (answers with supporting work) to these problems separate paper.

1. I've got a twelve sided die with six sides labeled 1, four sides labeled 2, and two sides labeled 3.

   (a) Suppose I roll that die once.
   What is the probability that I roll a 2 or a 3?

   (b) Suppose I roll twice.
   What is the probability that I roll a 2 and a 3?

2. Suppose I can buy a lottery ticket for $1 to get 1 chance in $100,000$ to win $10,000$ and 1 chance in $1,000$ to win $100. What is the expected value of that ticket?

3. Consider a random variable X with the following distribution:

X	1	2	3	6
$P(X)$	0.3	0.3	0.1	0.3

   (a) Write down the specific formula showing that $E(X) = 3$.

   (b) Write down the specific formula to evaluate $\sigma(X)$.

4. According to last year's UNCA Factbook, there were 823 Faculty and Staff employed at UNCA and 3727 students enrolled. Suppose we randomly choose pick 20 people from this population of 4550 people. What is the probability that exactly 16 of those people are students? Be sure to express your answer as a formula.