Name **MAT 330-Introduction to Statistics**
Date **Assignment #6**

1. Use the following to answer questions (a)-(f):

The following table lists the probability distribution of a discrete random variable *x*:

x	0	1	2	3	4	5	6	7
$P(x)$	0.04	0.11	0.18	0.22	0.12	0.21	0.09	0.03

a. The probability of $x = 3$ is:
b. The probability that *x* is less than 5 is:
c. The probability that *x* is greater than 3 is:
d. The probability that *x* is less than or equal to 5 is:
e. The probability that *x* is greater than or equal to 4 is:
f. The probability that *x* assumes a value from 2 to 5 is:

2. Use the following to answer questions (a)-(b):

The following table lists the probability distribution of a discrete random variable *x*:

x	0	1	2	3	4	5	6	7
$P(x)$	0.04	0.11	0.18	0.22	0.12	0.21	0.09	0.03

a. The mean of the random variable *x* is:

b. The standard deviation of the random variable *x* is:

3. Eight percent of all college graduates hired by companies stay with the same company for more than five years. The probability, rounded to four decimal places, that in a random sample of 11 such college graduates hired recently by companies, exactly 3 will stay with the same company for more than five years is:

4. Thirty-two percent of adults did not visit their physicians' offices last year. The probability, rounded to four decimal places, that in a random sample of 8 adults, exactly 3 will say they did not visit their physicians' offices last year is:

5. All 10 of the orangutans at a certain zoo contract a very serious disease which claims 84% of its victims (if an orangutan contracts the disease, the probability that it will die is 0.84). What is the probability, rounded to four decimal places, that exactly 1 of the orangutans at this zoo will survive?