

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:

Name  
Date

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

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?