1. Find the following probabilities:

(A) Events A and B are mutually exclusive events defined on a common sample space. If P (A) = 0.3 and P(A or B) = 0.40, find P(B).

(B) Events A and B are defined on a common sample space. If P(A) = 0.50, P(B) = 0.50, and P(A or B) = 0.60, find P(A and B)

2. A bag of jelly belly candies contains the following colored jelly beans:  red (6), blue (2), orange (5), brown (21), green (10), and yellow (6).  Construct the probability distribution for x.

3. Find the mean and standard deviation of the following probability distribution:

|  |  |  |  |
| --- | --- | --- | --- |
| x | 1 | 2 | 3 |
| *P*(*x*) | 0.2 | 0.6 | 0.2 |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

1 0.2- .2

2 0.6 - .12

3 0.2 - .6

=.20 mean

=

4. Classify the following as discrete or continuous random variables.  
   
(A) The weight of a school bus containing 22 football players  
(B) The number of times required for a modem to dial an internet     provider before connecting  
(C) A pair of dice is rolled, and the sum to appear on the dice is recorded  
(D) The blades of grass on a front lawn

5. In testing a new drug, researchers found that 5% of all patients using it will have a mild side effect. A random sample of 15 patients using the drug is selected. Find the probability that:   
   
(A) exactly three will have this mild side effect  
(B) at least two will have this mild side effect.

6. X has a normal distribution with a mean of 75.0 and a standard deviation of 3.5. Find the following probabilities:  
   
(A) P(x < 73.0)  
(B) P(72.0 < x < 78.0)   
(C) P(x>79.0)   
x