Chapter 4

1.Ten individuals are candidates for positions of president, vice president of an organization. How many possibilities of selections exist?

2. As a company manager for Claimstat Corporation there is a 0.40 probability that you will be promoted this year. There is a 0.72 probability that you will get a promotion, a raise, or both. The probability of getting a promotion and a raise is 0.25.

a. If you get a promotion, what is the probability that you will also get a raise?
b. What is the probability that you will get a raise?
c. Are getting a raise and being promoted independent events? Explain using probabilities.
d. Are these two events mutually exclusive? Explain using probabilities.

3.The sales records of a real estate agency show the following sales over the past 200 days:

Number of Houses Sold	Number of Days
0	60
1	80
2	40
3	16
4	4

a. How many sample points are there?
b. Assign probabilities to the sample points and show their values.
c. What is the probability that the agency will not sell any houses in a given day?
d. What is the probability of selling at least 2 houses?
e. What is the probability of selling 1 or 2 houses?
f. What is the probability of selling less than 3 houses?

4.A bank has the following data on the gender and marital status of 200 customers.

	Male	Female
Single	20	30
Married	100	50

a. What is the probability of finding a single female customer?
b. What is the probability of finding a married male customer?
c. If a customer is female, what is the probability that she is single?
d. What percentage of customers is male?
e. If a customer is male, what is the probability that he is married?
f. Are gender and marital status mutually exclusive?

1. Answer: 90
2. Answers:
    a. 0.625
    b. 0.57
    c. No, because $P(R) \neq P(R \mid P)$
    d. No, because $P(R \cap P) \neq 0$
3. Answers:
    a. 5
    b.

Number of Houses Sold	Probability
0	0.30
1	0.40
2	0.20
3	0.08
4	0.02

    c. 0.3
    d. 0.3
    e. 0.6
    f. 0.9
4. Answers:
    a. 0.15
    b. 0.5
    c. 0.375
    d. 60%
    e. 0.833
    f. No, the intersection is not zero.