1. From textbook, page 362 number 36, make a Venn diagram and answer the questions: How many

(a) subscribe to all three newspapers?

(b) subscribe to only NYT? subscribe to only WSJ? subscribe to only UST?

(c) subscribe to exactly two newspapers?

2. Three cans containing marble are set in a row and listed as can-1, can-2 and can-3. Can-1 contains a red and a blue and a white marble. Can-2 contains a red and a white and a green marble. Can 3 contains a blue and a white and a green marble. Make a tree diagram and Answer the questions on the basis that you pull one marble from each can.

(a) What is the total number of sequences that would occur by pulling one marble from each can?

(b) How many ways can you pull at least one red marble?

(c) How many ways can you pull a red, a white and a blue marble?

(d) How many ways can you pull marbles without pulling a blue one?

(e) How many ways can you pull exactly two white marbles?

(f) How many ways can you pull either two red or two blue marbles?
3. Fred is about to take a 10 question multiple choice test. The first five questions have three choice answers and the second five questions have four choice answers. How many different responses are possible if he answers all ten questions?

4. How many three digit numbers can be formed using the numbers 
   \{1, 2, 3, 4, 5, 6, 7, 8\} 
   (a) if repetition is not permitted?

   (b) if repetition is permitted?

5. From a group of 50 people, a president, vice president, secretary and treasurer are to be selected. How many possibilities are there?

6. From a group of 50 people, a committee of 6 people is to be formed. How many different ways can this committee be selected?

7. Find the number of permutations formed from the word Mississippi.

8. In how many ways can a subcommittee of four be chosen from a Senate committee of five Democrats and four Republicans if
   (a) All members are eligible?

   (b) the subcommittee must consist of two Republicans and two Democrats?