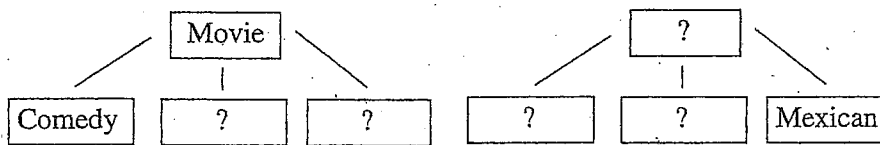# Probability Practice (Reg.)

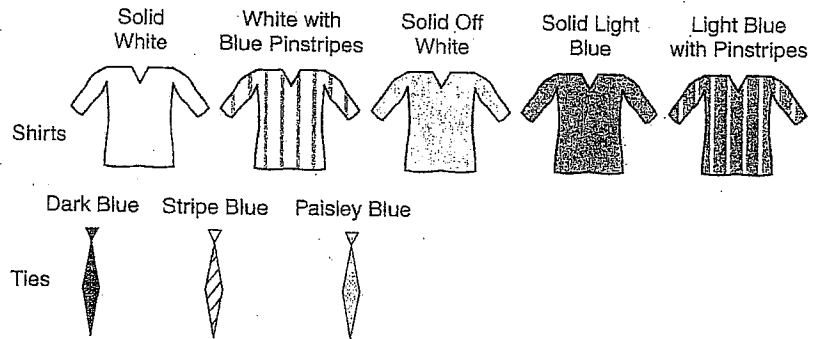## Counting Techniques

1. **Complete the tree diagram below. Then write a real-life problem that can be represented by the diagram.**

```
              Movie                      ?
         /     |     \            /      |      \
   Comedy    ?       ?         ?        ?      Mexican
```

2. **On a particular night at a restaurant, there is a special in which you can choose a dinner consisting of a cup of soup, one entrée, one dessert, and a beverage, all for only $4.95. There are 4 kinds of soup, 10 entrees, 6 desserts and 3 different beverages. Use the counting principle to find how many different meals you could choose.**

3. You need to buy a shirt and tie for a special occasion. There are five different colors of shirts and three different types of ties to choose from. Use the counting principle to find how many different combinations of a shirt and tie are possible. Then confirm your answer by listing the different combinations.

Shirts: Solid White, White with Blue Pinstripes, Solid Off White, Solid Light Blue, Light Blue with Pinstripes

Ties: Dark Blue, Stripe Blue, Paisley Blue

4. The four officers of a seventh grade class, Sue, David, Angel and Brett, are having their picture taken for the yearbook. Use a tree diagram and show it below to determine the number of different ways the four can stand in a row.

5. You and a group of friends love to go to the movies. You always purchase popcorn, a soda, and candy. You can choose buttered or unbuttered popcorn, 5 different kinds of soda, and 18 different types of candy. How many different times can you go to the movies and not have the same snacks as you did the last time? Use ay method you would like to solve this but show your work below.

6. In Exercise a and b below, use the following information. You are on a game show. You have a chance to win a BRAND NEW CAR! All that you have to do is to guess the actual price of the car. The price is a five digit number. The diagram gives the choices for each digit.

   a) How many possible prices are there?
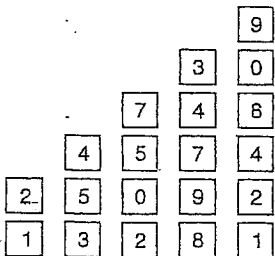
   b) What is the probability of randomly choosing the actual price on your initial guess?

```
                              9
                     3        0
            7        4        6
      4     5        7        4
2     5     0        9        2
1     3     2        8        1
```