The Fundamental Counting Principle
Worksheet

Draw a tree diagram for each of the following problems.

1. You go to the snack bar to buy a bagel and a drink for lunch. You can choose from a plain bagel, a blueberry bagel, or a raisin bagel. The choices for a drink include water or a sports drink. How many different lunches could be made with these choices?

2. When you get ready to get dressed for school you open your closet to find that you have the following choices: a red, blue, or white shirt; jeans or sweatpants; tennis shoes or sandals. How many different outfits could be made with these choices?

Use the Fundamental Counting Principle to answer the following problems.

1. A restaurant offers four sizes of pizza, two types of crust, and eight toppings. How many possible combinations of pizza with one topping are there?

2. How many ways can 5 paintings be lined up on a wall?
3. Grace loves to eat salad! How many salads can she put together if she can choose one from each of the following: two types of lettuce, 4 types of vegetables and 7 types of dressing?

4. You go to Best Buy to purchase a new television. You have the following choices: LCD or plasma; screen size 27”, 32”, 36”, 41”, 51”, or 63” and manufacturer Sony, Vizio or Phillips. How many different televisions does the store have to offer?

5. A lock has four dials. On each dial are the digits 0 to 9. How many possible combinations are there?

6. A website requires users to set up an account that is password protected. If the password format is four letters followed by a single digit number, how many different passwords are possible?

7. AZ license plates have 3 letters followed by 4 numbers.
   a. If the same letter or number can be repeated, how many can be made?
   
   b. If the same letter CANNOT be repeated, how many can be made?