

## *The Counting Principle*

For dinner, Wanda can choose from 2 proteins (beans and fish), 4 vegetables (beans, broccoli, carrots, and corn), and 2 breads (rolls and biscuits). How many different protein-vegetable-bread selections can she make for dinner?

$$2 \text{ Proteins} \times 4 \text{ Vegetables} \times 2 \text{ Breads} = 16$$

So, Marsha can choose from 16 selections.

**Remember: The Counting Principle is easy! Simply MULTIPLY the number of ways each activity/event can occur.**

- 1) How many outcomes are there when rolling a pair of dice?
  
  
  
  
  
  
  
  
  
  
- 2) 25 people are in your class, of which 12 are males. How many ways can you elect 1 male and 1 female for student council representatives?
  
  
  
  
  
  
  
  
  
  
- 3) If a license plate consists of 2 letters followed by 4 numbers, how many license plates can be created without duplication?
  
  
  
  
  
  
  
  
  
  
- 4) At Joe's restaurant, you have a choice of 4 appetizers to start you off followed by 7 main entrees and a pick of 4 different desserts. How many ways can you order 1 appetizer, 1 entree, and 1 dessert?
  
  
  
  
  
  
  
  
  
  
- 5) Morgan has a blue, a red and a purple pair of pants.. He also has black shoes, red shoes, green shoes and yellow shoes. What is the probability that he will pick the blue pants with yellow shoes?

- 6) If ice cream sundaes come in 10 flavors with 6 possible toppings, how many different sundaes can be made with one flavor of ice cream and one topping?
- 7) One quarter, and a pair of dice are tossed. How many results are possible?
- 8) A sporting goods store sells 15 different styles of running shoes, each available in 4 colors. How many combinations of color and style are there?
- 9) A witness to a holdup reports that the license of the getaway car consisted of 6 different digits. He remembers the first two but has forgotten the remainder. How many licenses do the police have to check?
- 10) Kyla has two belts, twenty pairs of pants, 30 shirts, 10 pairs of socks, and four different pairs of shoes. How many different outfits can Kyla create?