Bellwork Friday, May 2, 2014

1. There are 12 players on the team and after the game they go over to the ice chest to get some drinks. There are only 3 drinks in the chest, 1 Coke, 1 Sprite, and 1 Root Beer. How many ways can these three drinks be given to the 12 players?

$_{12}P_3 = 1320$

What if the drinks were all the same kind?

$_{12}C_3 = 220$

2. You are playing cards with a friend. You are dealt 7 cards. How many different ways can you arrange these cards in your hand?

$_7P_7$ or $7! = 5040$

3. There are 12 boys and 14 girls in a class.

a) How many way scan a team of 3 students be selected to work in a group on a project?

$_{26}C_3 = 2600$

How would you find the number of ways if there has to be 1 girl and 2 boys?

$_{12}C_2 \cdot {}_{14}C_1 =$

b) If each person were assigned a different job on the team, how many different ways can the team be selected?

$_{26}P_3 = 15{,}600$

4. Amani has 10 quarters in her purse. She buys a pack of gum for $1.25. How many ways can she reach into her purse and randomly get enough money to buy the gum?

$_{10}C_5 = 252$

5. There are 7 bells in a bell tower and each rings a different tone. If 5 bells are randomly rung how many different "songs" can be produced?

$_7P_5 = 2520$

6. A test consists of 10 multiple choice questions. Each question has 4 choices: A, B, C, and D. How many different ways can the 10 questions be answered?

$4 \cdot 4 \cdot 4 \cdot \_ \cdot \_ \cdot \_ \cdot \_ \cdot \_ \cdot \_ \cdot \_$

$4^{10} = 1{,}048{,}576$

7. On a test the first part has 8 questions. The directions state that you are to choose to do only 3 of these questions and they all have the same value. How many ways can you choose to complete this part?

$_8C_3 = 56$

8. On an hour long radio show starting at 4:00pm there are 6 commercial breaks:

#1: 4:00 to 4:01 #2: 4:10 to 4:11 #3 4:20 to 4:21
#4 4:30 to 4:31 #5 4:40 to 4:41 #6 4:50 to 4:51

There are 6 different commercials to play, each 1 minute long. The results of a survey show that the number of listeners differs depending on the time slot. How many different ways can you schedule these commercials?

$_6P_6$ or $6!$ 720