GRADE 12 APPLIED PROBABILITY
FUNDAMENTAL COUNTING PRINCIPLE (FCP)

Name: _____

Date: _____

Show work.
Decimals to 2 decimal places. Preferably fractions

1. A restaurant offers three **sizes** of pizza, three different types of **crust** and twelve different **toppings**. How many different:

a. one topping pizzas can be made?

b. two topping pizzas can be made if you cannot use the same topping twice?

2. A baseball player has two different pairs of **cleats**, four different **bats**, three different **fielding gloves** and two pairs of **batting gloves** to choose from for each game. In how many ways can he choose one of each piece of equipment for a game?

Revised:

3. Dawn goes to the movies! She can choose from the following **snacks**: nachos, popcorn or a hot dog. There are nine different **soft drink** flavours and four different types of **candy**.

a. How many different combinations of things can Dawn buy if she wants a snack, a soft drink and one type of candy?

b. How many different combinations if she definitely gets nachos since she has a coupon for those!?

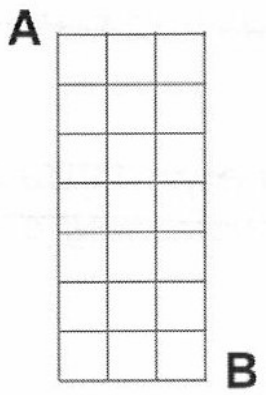
4. **License Plates**

a. How many different license plates can be made if they are made using three letters followed by three numbers? (Repetitions are allowed).

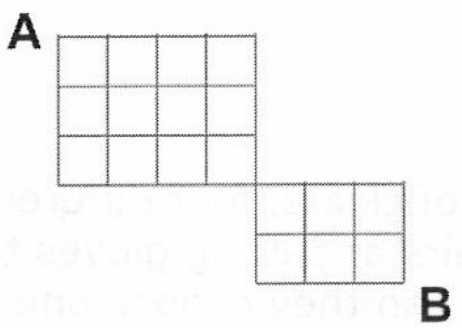
a. what about if the plates are constrained so that the first letter in the license plate has to be A to H only?

5. Postal codes in Northern Manitoba are made using **ROB** *NLN*, where **N** represents any digit and **L** represents any letter. How many postal code combinations are possible for Northern Manitoba?

6. How many ways can you go from **A** to **B** in the diagram below if you can only move right or down?



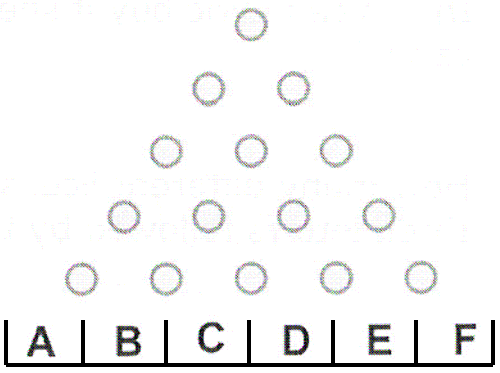
7. How many ways can you go from **A** to **B** in the diagram below if you can only move right or down?



A pinball machine is constructed as at right. Exit bins are marked with letters at the bottom.

a) Determine the number of pathways to each exit.

b) What is the total number of ways a ball can tumble to the bottom?



Challenge Question:

c. What is the probability it falls into bin B?

d. What is the probability it falls into bin E **or** F?