

Name:

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?

$$3 \cdot 2 = \boxed{6} \text{ lunches}$$

2. 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?

$$2 \cdot 4 \cdot 7 = \boxed{56} \text{ types}$$

3. Four students are to be chosen from a group of 10 to fill the positions of president, vice-president, treasurer and secretary. In how many ways can this be accomplished?

$$\underline{10} \cdot \underline{9} \cdot \underline{8} \cdot \underline{7} = \boxed{5040} \text{ ways}$$

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?

$$2 \cdot 6 \cdot 3 = \boxed{36} \text{ different types of TVs}$$

5. A shelf can hold 7 trophies. How many ways can the trophies be arranged if there are 10 trophies available?

$$\underline{10} \cdot \underline{9} \cdot \underline{8} \cdot \underline{7} \cdot \underline{6} \cdot \underline{5} \cdot \underline{4} = \boxed{604,800}$$

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?

$$\underline{26} \cdot \underline{26} \cdot \underline{26} \cdot \underline{26} \cdot \underline{10} = \boxed{4,569,760} \text{ different passwords}$$

7. How many 5-digit numbers can be formed if each one uses all the digits 0, 1, 2, 3, 4 without repetition?

$$\underline{5} \cdot \underline{4} \cdot \underline{3} \cdot \underline{2} \cdot \underline{1} = \boxed{120} \text{ 5 digit numbers}$$

8. In how many ways can 6 bicycles be parked in a row?

$$\underline{6} \cdot \underline{5} \cdot \underline{4} \cdot \underline{3} \cdot \underline{2} \cdot \underline{1} = \boxed{720} \text{ ways}$$

9. How many 5-number license plates can be made using the digits 1, 2, 3, 4, 5, 6, 7, if an odd digit must come first and ...

a. Repetitions ARE allowed $\underline{4} \cdot \underline{7} \cdot \underline{7} \cdot \underline{7} \cdot \underline{7} = \boxed{9,604}$

b. Repetitions are NOT allowed $\underline{4} \cdot \underline{6} \cdot \underline{5} \cdot \underline{4} \cdot \underline{3} = \boxed{1440}$