

Bellwork Alg 2 Thursday, May 23, 2019

1. You go to a dealership to buy a car. You've already decided on the model but need to pick an exterior color, an interior color, an accessories package, and an engine type. There are the following to choose from: 8 exterior colors, 5 interior colors, 6 accessory packages, and 3 engine types. How many different vehicles could be created?

2. In how many different ways can 6 people be arranged around a conference table?

3. You are making a fruit punch for a party. You have a large bowl that can hold three gallons. You have one gallon jugs of five different juices. How many different punches can be made using three different juices?

4. You have 10 trophies that you've won over the years. You want to display them on a shelf but the shelf can only hold seven trophies. How many ways can seven trophies be arranged on this shelf?

5. How many different 4-letter radio station call letters can be made if:

a) The first letter must be a K or W and no letter may be repeated?

b) Repeats are allowed and the first letter is still a K or W?

1. You go to a dealership to buy a car. You've already decided on the model but need to pick an exterior color, an interior color, an accessories package, and an engine type. There are the following to choose from: 8 exterior colors, 5 interior colors, 6 accessory packages, and 3 engine types. How many different vehicles could be created?

MULT.
COUNTING
PRINCIPLE

$$\frac{8}{\text{EXT color}} \cdot \frac{5}{\text{INT color}} \cdot \frac{6}{\text{ACCESS. PKG.}} \cdot \frac{3}{\text{ENG TYPE}} =$$

720
different
vehicles

2. In how many different ways can 6 people be arranged around a conference table?

ORDER
DOES
MATTER:
permutation

$$6! \text{ or } {}_6P_6 =$$

720

3. You are making a fruit punch for a party. You have a large bowl that can hold three gallons. You have one gallon jugs of five different juices. How many different punches can be made using three different juices?

ORDER
IS NOT
important:
Combination

$${}_5C_3 =$$

10

4. You have 10 trophies that you've won over the years. You want to display them on a shelf but the shelf can only hold seven trophies. How many ways can seven trophies be arranged on this shelf?

ORDER
DOES matter:
permutation

$${}_{10}P_7 =$$

604,800

5. How many different 4-letter radio station call letters can be made if:

a) The first letter must be a K or W and no letter may be repeated?

MULT.
COUNT.
PRINCIPLE.

$$\frac{2}{\text{K or W}} \cdot \frac{25}{\text{}} \cdot \frac{24}{\text{}} \cdot \frac{23}{\text{}} =$$

27,600

b) Repeats are allowed and the first letter is still a K or W?

MULT.
COUNT.
PRINCIPLE.

$$\frac{2}{\text{K or W}} \cdot \frac{26}{\text{}} \cdot \frac{26}{\text{}} \cdot \frac{26}{\text{}} =$$

35,152