

Bellwork Alg 2 Wednesday, May 20, 2020

Find the number of outcomes in each situation.

3. An encyclopedia has eight volumes. In how many ways can the eight volumes be arranged on the bookshelf?

of arrangements =

2. A fast-food restaurant has a meal special: \$5 for a drink, sandwich, side item and dessert. The choices are:

- Sandwich: Grilled chicken, All Beef Patty, Vegeburger and Fish Filet.
- Side: Regular fries, Cheese Fries, Potato Wedges.
- Dessert: Chocolate Chip Cookie or Apple Pie.
- Drink: Fanta, Dr. Pepper, Coke, Diet Coke and Sprite.

of possible meal specials =

3. Suppose you are asked to list, in order of preference, the three best movies you have seen this year. If you saw 10 movies during the year, how many different lists are possible?

of lists =

4. Your school offers two English classes, three math classes and three history classes. You want to take one of each class for your 1st, 2nd, and 3rd hours . How many different schedules for your first three hours are possible?

of schedules =

Find the number of outcomes in each situation.

3. An encyclopedia has eight volumes. In how many ways can the eight volumes be arranged on the bookshelf?

of arrangements =

40,320
different arrangements

MULT. COUNT. PRINC. $\frac{3 \text{ WAYS}}{8 \cdot 7 \cdot 6 \cdot 5 \cdot 4 \cdot 3 \cdot 2 \cdot 1}$

Factorial (since using ALL 8) = $8!$

permutation = ${}_8P_8$

"arranged" means order is important

2. A fast-food restaurant has a meal special: \$5 for a drink, sandwich, side item and dessert. The choices are:

- Sandwich: Grilled chicken, All Beef Patty, Vegeburger and Fish Filet.
- Side: Regular fries, Cheese Fries, Potato Wedges.
- Dessert: Chocolate Chip Cookie or Apple Pie.
- Drink: Fanta, Dr. Pepper, Coke, Diet Coke and Sprite.

of possible meal specials =

120
different meals

MULT. COUNT. PRINC.

$\frac{4}{\# \text{ Sandwiches}} \cdot \frac{3}{\# \text{ Sides}} \cdot \frac{2}{\# \text{ Desserts}} \cdot \frac{5}{\# \text{ Drinks}}$

3. Suppose you are asked to list, in order of preference, the three best movies you have seen this year. If you saw 10 movies during the year, how many different lists are possible?

of lists =

720
different lists

permutation because order is important

${}_{10}P_3$

4. Your school offers two English classes, three math classes and three history classes. You want to take one of each class for your 1st, 2nd, and 3rd hours. How many different schedules for your first three hours are possible?

of schedules =

18
different schedules

$\frac{2}{\# \text{ English}} \cdot \frac{3}{\# \text{ Math}} \cdot \frac{3}{\# \text{ History}}$