

Name: _____ Period: _____ Date: _____

Permutations and Combinations Exit Quiz

Solve the following problems Permutation and Combination.

1. How many 4-digit passwords of distinct characters can be formed using the numbers 0-9?
2. How many 5 - member committees can be formed from 10 people?
3. How many ways can three books of different titles be rearranged on a shelf?
4. How many ways can we rearrange the letters in the word "LEARNING"?
5. There are 5 males and 5 females. How many 5-member committees can be formed if a committee is composed of 2 males and 3 females?

Permutations and Combinations Exit Quiz

Answer:

Solve the following problems Permutation and Combination.

1. How many 4-digit passwords of distinct characters can be formed using the numbers 0-9?

Solution: $n = 10, r = 4$

$${}_{10}P_4 = \frac{10!}{(10-4)!} = 5040 \text{ ways}$$

2. How many 5 - member committees can be formed from 10 people?

Solutions: $n = 10, r = 5$

$${}_{10}C_5 = \frac{10!}{(10-5)!5!} = 252 \text{ ways}$$

3. How many ways can three books of different titles be rearranged on a shelf?

Solution: $n = 3, r = 3$ ${}_3P_3 = 3! = 6$

4. How many ways can we rearrange the letters in the word "LEARNING"?

Solution: $n = 8$, where L, A, E, R, I and G = 1 and N = 2

$${}_8P_8 = \frac{8!}{2!1!1!1!1!1!1!} = 20160 \text{ ways}$$

5. There are 5 males and 5 females. How many 5-member committees can be formed if a committee is composed of 2 males and 3 females?

Solution:

$n = 5, r = 2$ and $n = 5, r = 3$

$${}_5C_2 = \frac{5!}{(5-2)!2!} = 10 \text{ and } {}_5C_3 = \frac{5!}{(5-3)!3!} = 10$$

$(10)(10) = 100 \text{ committees}$