

Permutations Definitions and Formulas



Here are 15 one-mark questions on **Permutation and Combinations**:

Questions:

1. How many ways can 5 people be arranged in a row?
2. In how many ways can a team of 3 players be chosen from 6 players?
3. What is the value of $P(7, 3)$?
4. How many ways can the letters of the word "MATH" be arranged?
5. From a group of 10 students, how many ways can 2 students be selected?
6. What is $C(5, 2)$?
7. In how many ways can 4 different books be arranged on a shelf?
8. How many ways can you choose 3 toppings for a pizza from 7 available toppings if the order does not matter?
9. In how many ways can you arrange 5 distinct objects in a circle?
10. Calculate $P(6, 2)$.
11. From a deck of 52 cards, how many ways can 4 cards be chosen?
12. If you need to select 2 people from a group of 8, how many combinations are there?
13. How many different committees of 4 people can be formed from 9 people?
14. How many ways can 4 red balls be arranged in a row?
15. In how many ways can you choose 3 out of 5 identical objects?

Key:

1. $5! = 120$
2. $C(6, 3) = 20$
3. $P(7, 3) = \frac{7!}{(7-3)!} = 210$
4. $4! = 24$
5. $C(10, 2) = 45$
6. $C(5, 2) = 10$
7. $4! = 24$
8. $C(7, 3) = 35$
9. $(5 - 1)! = 4! = 24$
10. $P(6, 2) = \frac{6!}{(6-2)!} = 30$
11. $C(52, 4) = 270725$
12. $C(8, 2) = 28$
13. $C(9, 4) = 126$
14. $4! = 24$
15. $C(5, 3) = 1$ (since objects are identical)