**LESSON 1**

**1. Permutations (Order Matters)**

**Used when arranging items or people in a sequence.**

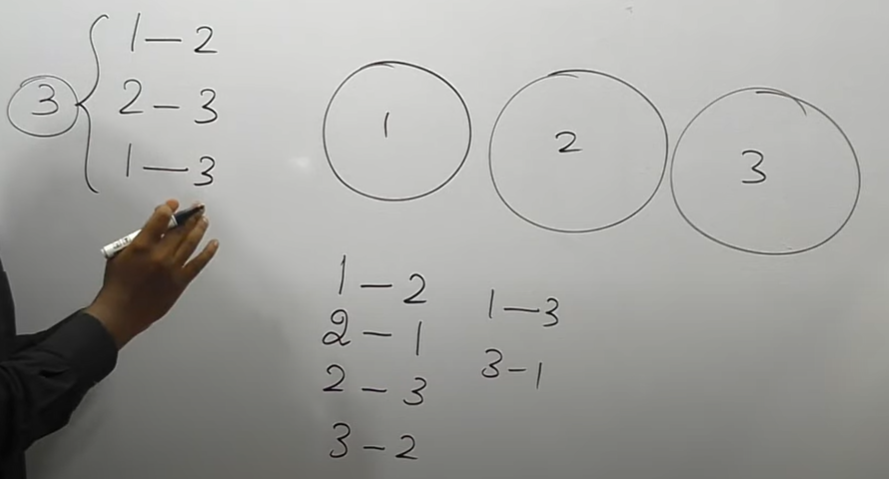
* **nPr = n! / (n-r)! → Number of ways to arrange r objects from n**

**2. Combinations (Order Does Not Matter)**

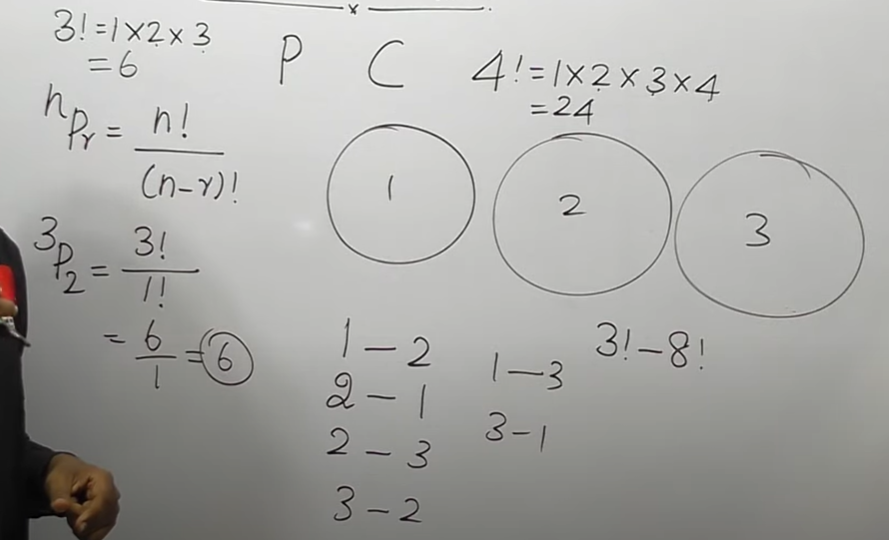
* Used when **selecting items** without caring about the order.
* nCr = n! / [r! \* (n-r)!] → Number of ways to choose r objects from n

REQUIRED POSSIBLE –COMBINATION

ALL **P**OSSIBLE OUTPUTS (taking from left, as well as right hand)—**PERMUTATION**



n-total r-selection

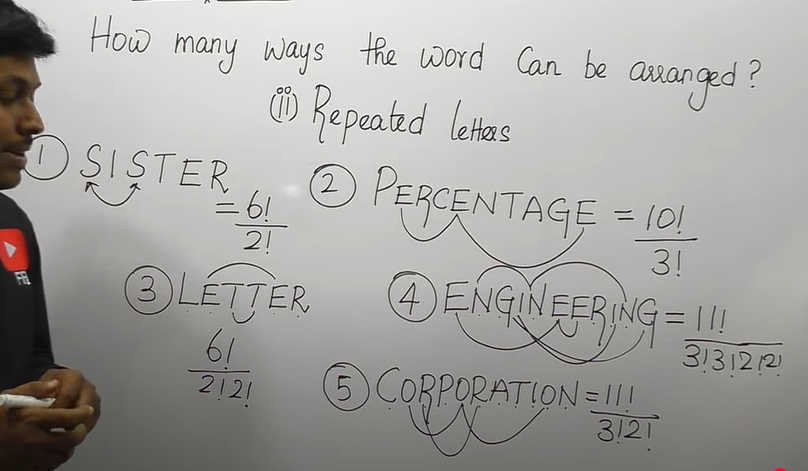


**LESSON 2**

**TYPE 1- NON REPEATED LETTERS LESSON 2**

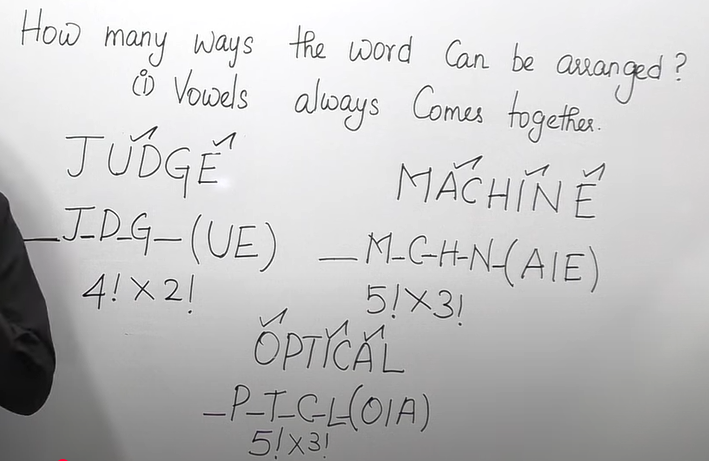


**TYPE 2- REPEATED LETTERS**

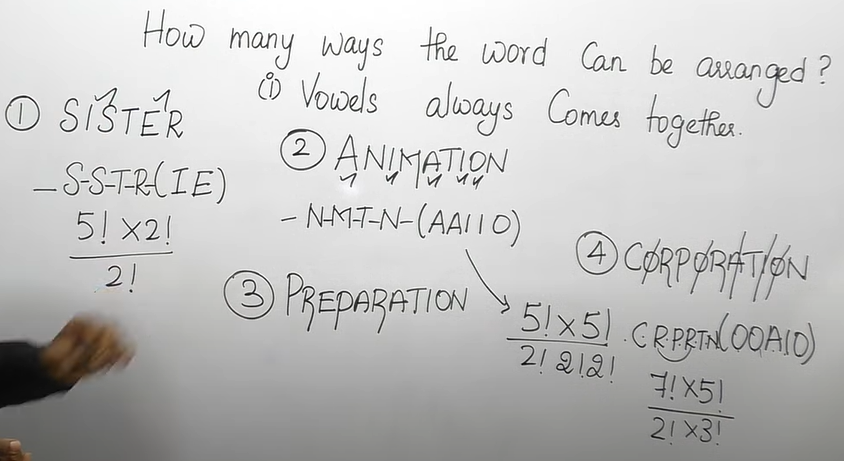


**LESSON 3**

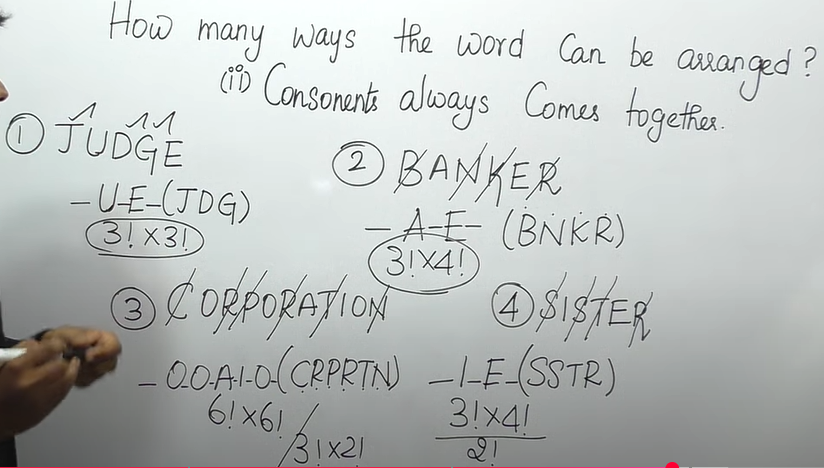
**VOWELS COMES TOGETHER (NON-REPEATED LETTERS)**



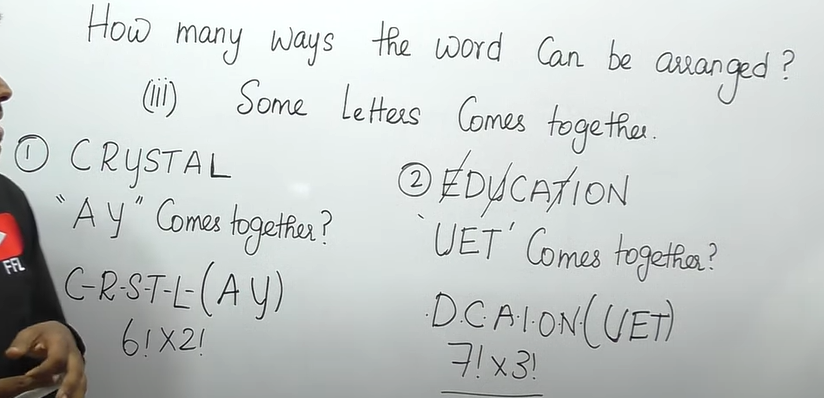
**VOWELS COMES TOGETHER ( REPEATED LETTERS)**



**CONSONANTS COMES TOGETHER ( REPEATED LETTERS)**

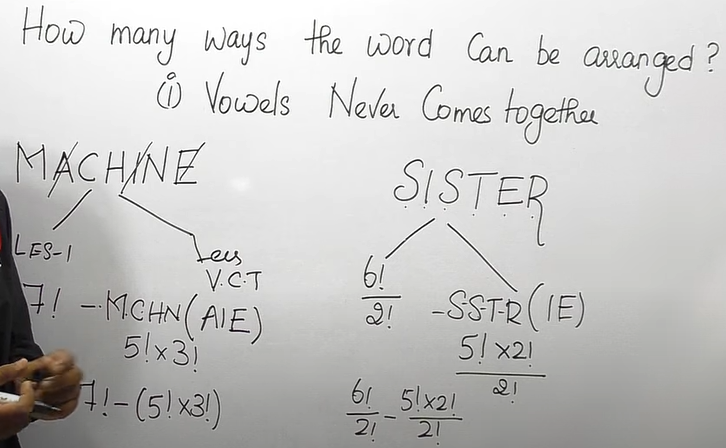


**SOME LETTERS COMES TOGETHER:**

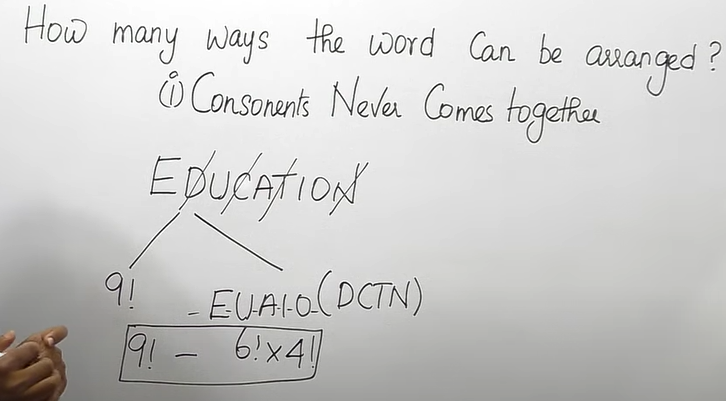


**LESSON 4**

**VOWELS NEVER COMES TOGETHER**

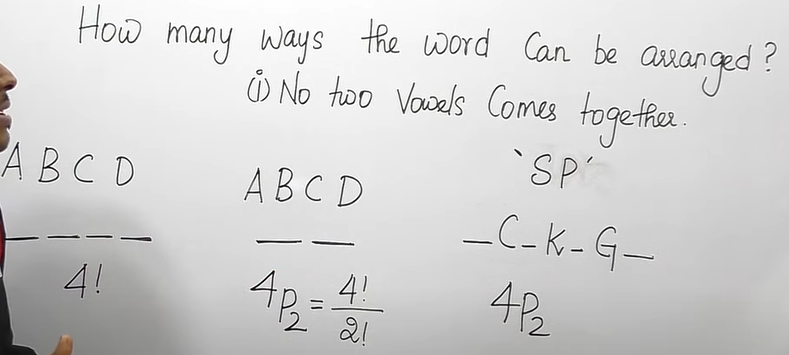


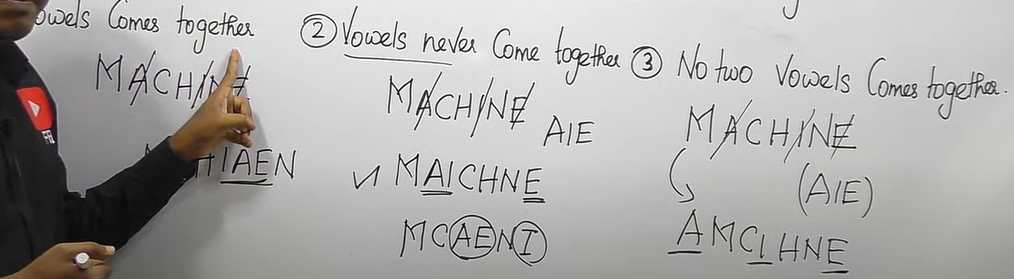
**CONSONANTS NEVER COMES TOGETHER**

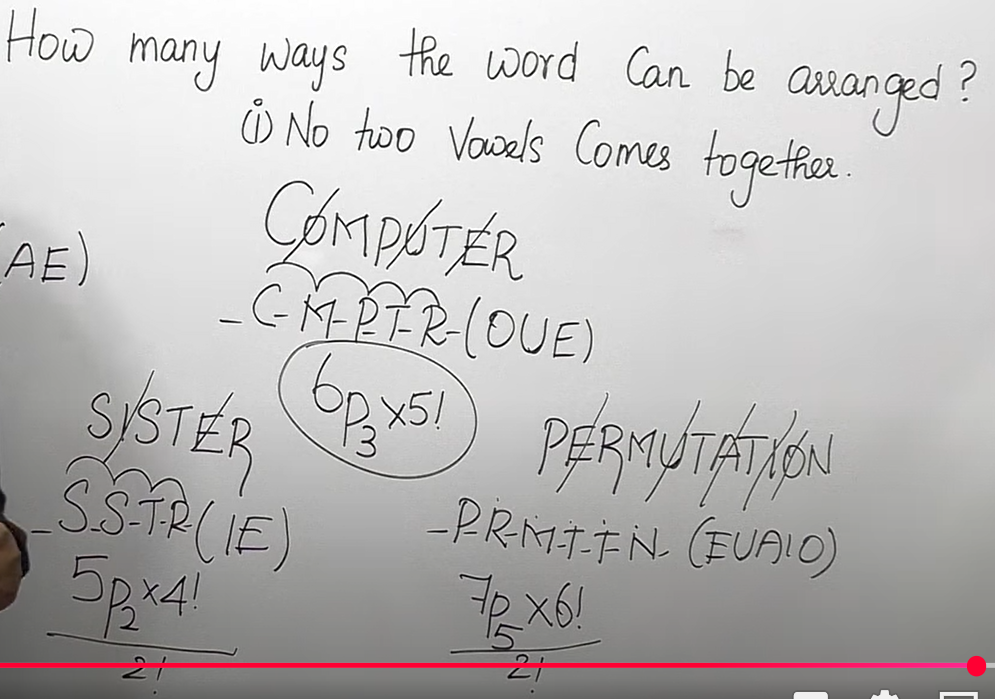


**LESSON 4**

**NO TWO VOWELS / CONSONANTS COMES TOGETHER**

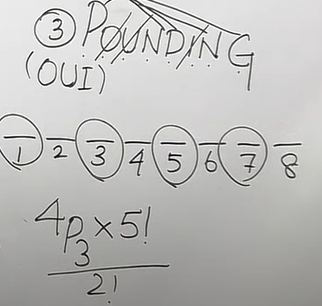
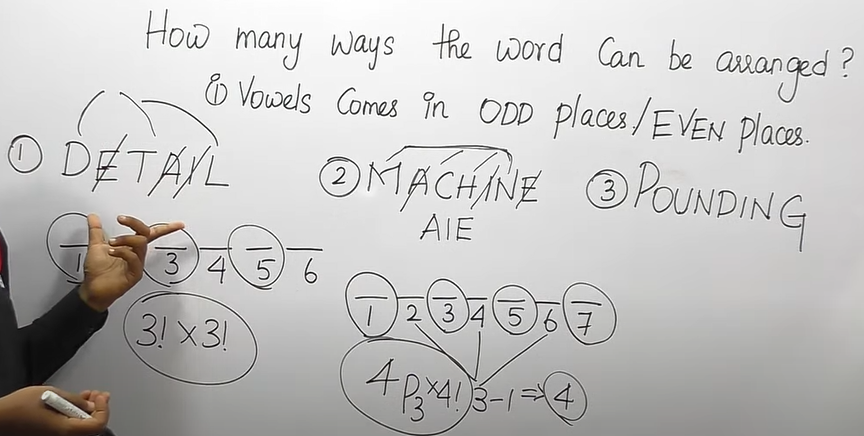






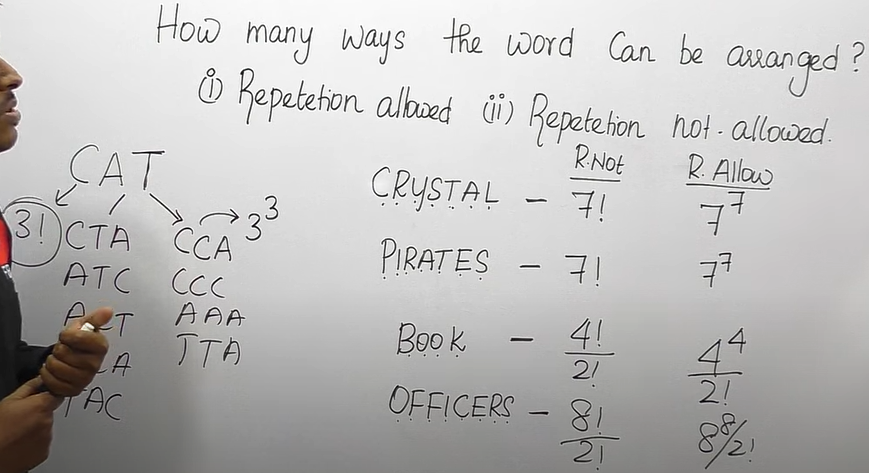
**LESSON 5**

**VOWELS / CONSONANTS COMES IN ODD/ EVEN PLACES**



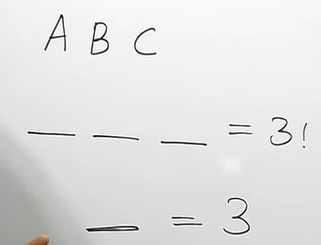
**LESSON 6**

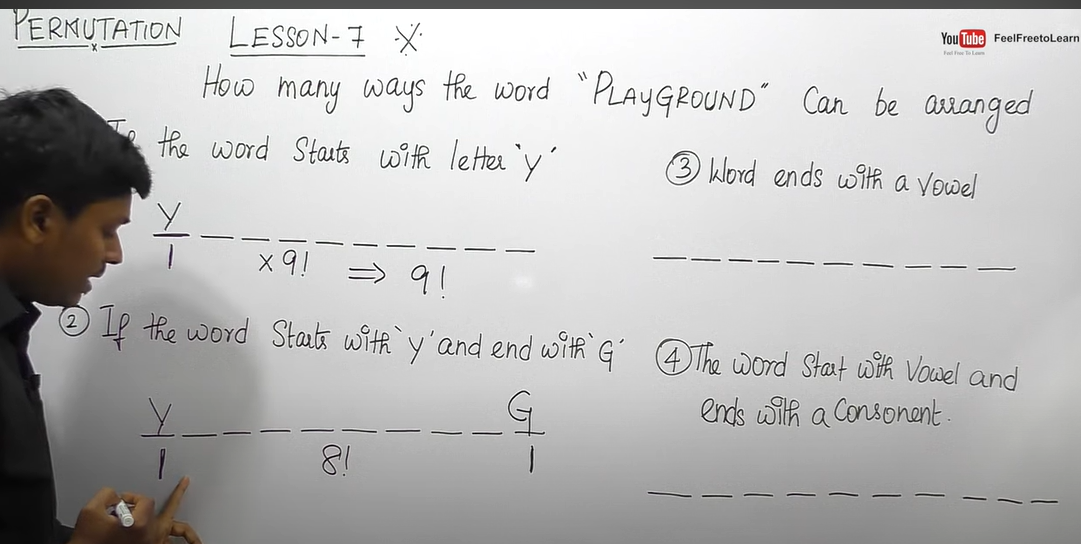
**REPETITION ALLOWED/ NOT ALLOWED**

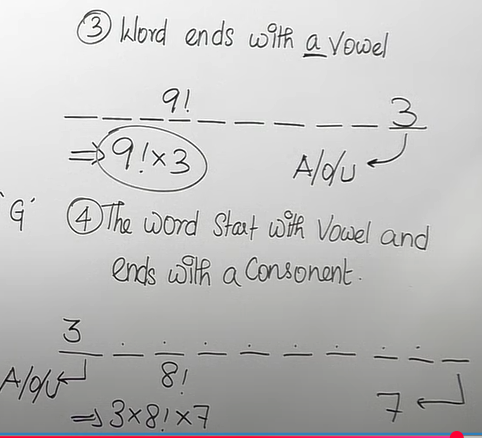


**LESSON 7**

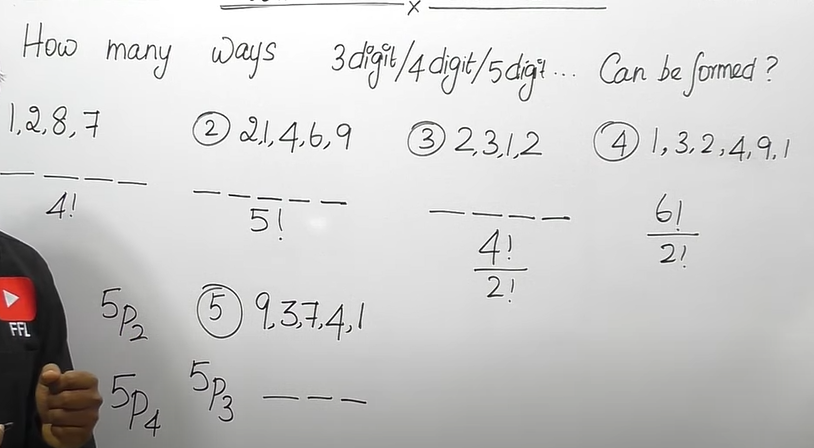
**MISCELLANEAOUS QUESTION**





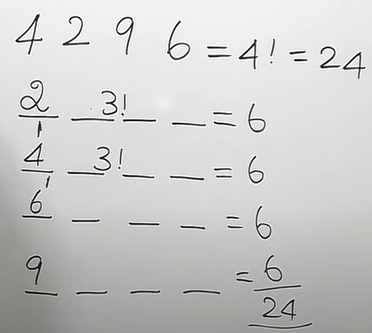


**LESSON 8**

**PROBLEMS BASED ON NUMBERS**

**LESSON 8**

**NON ZERO NUMBERS**



**BASED ON NUMBER ZERO**

