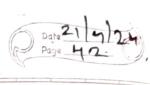
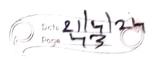
5. Permutation & Bunday Date 2114124 Combinations. 51 Combinatories Basics. Fermutations It is different arrangements
of a given number of elemente tables
one by one, or some, or all at a
time. -> For example, of we have two elements A of assangemente, AB and BA. -> Number of permutations when relimined are arranged out of a total of in elemente is: " Pr= nl= eg= Let n=4 (AB, C.D) and r=2. 2 Total germututions _ nl = 40 = 423 20 7 These twelve permutations cours ?
AB, AC, AD, BA, BC, BD, CA, CB, CD,
PA, DB, DC.



=> Combinations number of elements taken one by one, -> For example, if we have two elements A and B, then there is only one way-select two items, we select both. -> Number of combinations when is elements are selected out of a total of n'elemente mar = ml 41 (N-2) (e.g.: Let n=4(A,B,C,D) and r=2 (A)1 > Total combinations will be = 41 21(4-2)? = 4237 Com also be solved like:



=> Counting Principles;

3 There are two basic counting grinciples:

1.) Sum Rule: Tot a talk can be done in one of no ways or one of no ways, whore none of the set of no ways, then there are not no ways to do the task.

vegidishes and 6-non-veg dishes

19 5+6=11 ways

2) Product Rule: If a task can be broken down an a sequence of Kgultusks, where each subtask our be
performed in resp. M1, M2, M3, ... Mr
coespectively then the total mo. of ways
the tag task can be performed is

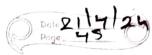
M1 to 2** - ** hk.

Prizer Le given to the top 3 players ? In a game Played by 12 players ?

-> Well have to distribute 35 polses and among 12 players. This task can be divided anto 3 subtasks of



assigning a single prize to a certain > Criving out the freet prize can be done in 12 different ways. After done in 12 different ways. After oprize, two prizes or main and 12 players memain. polec can be given in 11 ways and 10 vaus. product outer 12-2 1/2010 = 1320 Puestione 1 In how many ways can a person - choose a project from the India liste of projects of size, 10, 1,9 and 7 1957: 10 rays 19562: 15 mays List 3: 19 maye Total no of nays to select a project 37+10= 11 ways Then, = Hinys = 946 ways



Question=2 How many distinct license plates

For possible in the given format
Two alphabets in upper case, followed

by two digits then a hyphen and

finally four digite. sample, AB12-8456. => Two alphabete in uppercore = 26 x26
Followed by two digits. -> No. of ways to select a digit=10 -> No. of ways to select an alphabet = 20 : Potal no of distinct become plate can
be formed = 26x26x10x10x10x10xi
= 576x106 ways Puestion: 3 How many variable manes of Tength upto 3 exist if the variable names are alphanumeric and case sensetive with the restriction that the Arst character has to be an alphabet? congulary alghabet = 32 mays (A-29-2) -> For variable lingth of 1: 52 rays -> For variable of lingth 2:52 x62 ways -> For variable of lingth 3:52x6x62 ways : Total raye= 52 (7+62+62°) =52(1+62(63)) 552 (3906+1)

= 52(390)) = 203/6hwca