Assignment - 1

a) How many different 5 digit no. can we constructed out of the digits 1, 1, 1, 3, 8 ?

Sol :- We are have to fill 5 ~~different~~ places with 3 different digits. Here 2 cases arise in which we can ~~do this thing~~ construct 5 digit numbers

Case-I Repetition of digits is allowed

Then the 5 different places can be filled with 5 distinct numbers respectively

Hence the no. of 5 digit numbers $= 5 \times 5 \times 5 \times 5 \times 5$
$= 3125$

Case-II Repetition of digits is not allowed

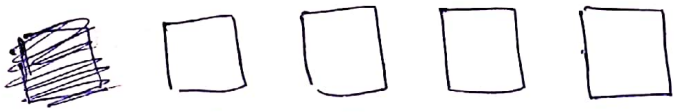
Then, the 5 different places can be filled in the following ways

For one's places = 5 ways
For ten's place = 4 ways
For hundred's place = 3 ways
For thousand's place = 2 ways
For ten-thousand's place = 1 way

so total no. of ways $= 5 \times 4 \times 3 \times 2 \times 1$
$= 120$ ways

Assignment - 2

Q) How many odd numbers between 1000 & 9999 have distinct digits?



$8 \times 8 \times 7 \times 5$

Here we have to form odd numbers & we know odd numbers can be formed only if the one's places has the digits 1, 3, 5, 7, 9. &

so the one's place can be filled in 5 ways

Again, the thousand's place cannot be filled with 0 and the digit in the one's place.
so it can be filled in 8 ways

Similarly the hundred's place can be filled with the numbers from 0 to 9 except the digits in the thousand's & one's place.
So it can be filled in 8 ways

Lastly, the ten's place can be filled with ~~no~~ numbers from 0 to 9 except the digits in the thousand's, hundreds & one's places.
So it can be filled in 7 ways

So total no. of ways = $8 \times 8 \times 7 \times 5$

$= 2240$