**Probability & Statistics: - *Counting:***

1. Many times, one needs to calculate the number of all possible outcomes for series of events.

* Counting is astronomical.
* The **rule of sum**.(tasks and ways)(OR)
* The **rule of product**.(tasks and ways) (AND)
* ***EX***:

Divisor of 1000 = 23 \*53 (by prime factor)

So 4 \* 4 = 16 is the divisor of 1000.

Sum of divisor(sum of GP): 2050 +2051+2052+2053 + 2150+………….+23 53  ***(or)*** ((24-1)/2-1) \* ((54-1)/5-1)

* **Factorial** - Arrangement: (n!) = n \* (n-1) \*(n-2)!
* **Permutation** – set of arrangement

( npr ) = n \* (n-1) \*(n-2)\*……\*(n-r+1)\*(n-r)\* (n-r-1)\*…..\*1 **/** (n-r)\* (n-r-1)\*…..\*1

Ex: 8p3  = 8\*7\*6

11p2 = 11\*10

* **Combination**

**Data Science :** data prediction (statistics, machine model) future\*

**Data Analytics:** stock market **…**present\*

Completed 3