

MATHS

$$1 \text{ Lac} = 10^5$$

$$1 \text{ million} = 10^6 = 10 \text{ Lacs}$$

$$1 \text{ crore} = 10^7 = 100 \text{ Lacs}$$

$$1 \text{ billion} = 10^9 = 100 \text{ crores}$$

$$1 \text{ trillion} = 10^{12}$$

Q → What is the number of laptops sold in Bangalore on an average routine day?

- Laptop is a costly product, I am assuming people buy laptop only when they need. So I will calculate potential market of laptops in India.

$$\text{Population of India} = 1.2 \text{ billion} = 120 \text{ crore}$$

$$1.5\% \text{ is Bangalore} = 18 \text{ Million to } 20 \text{ Million}$$

Age Distribution

0-15 : They don't need personal laptop. They prefer to use other laptop.
: 30% of population.

15-22 : 10% of population $\Rightarrow 10\% \text{ of } 20 = 2 \text{ Million}$
Assume 60% of population own laptop = 60% of 2 = 1.2 million

22-50 : 40% of population $\Rightarrow 40\% \text{ of } 20 = 8 \text{ Million}$

Assume Divide them into 3 classes

i) White Collar Job (Permanent eg IT) - 25%

$$= 25\% \text{ of } 20 = 5 \text{ million}$$

$$= 80\% \text{ people own laptop} = 80\% \text{ of } 5 = 4 \text{ million}$$

ii) Blue Collar Job (Daily worker) : 50% - No laptop

iii) Small business man (25%) - 25% of 20 = 5 million

$$= 30\% \text{ people own laptop} = 1.5 \text{ million}$$

50-80 : 20% of population $\Rightarrow 20\% \text{ of } 20 = 4 \text{ million}$

- They also don't own any laptop.

$$\text{Total laptop in Bangalore} = 1.2 + 4 + 1.5 = 6.7 \text{ million}$$

$$\text{Average age of Laptop} = 5 \text{ years} = \frac{6.7}{5} = 1.34 \text{ million}$$

$$\text{Each year} = 1.34 \text{ million}, \text{ Each Day} = \frac{1.34}{365} = \frac{13 \text{ lacs } 40 \text{ thousand}}{365}$$

$$= 3671 \text{ laptops}$$

So, this include Desktop population also. Suppose laptop population is 80%.

$= (0.8) * 3671 = 2936$ laptop is sold per day (which is way more than actual, we missed some step)

Maths \rightarrow 1 Lac = 10^5
 1 million = 10^6 = 10 Lacs
 1 crore = 10^7 = 100 Lacs
 1 billion = 10^9 = 100 crore
 1 trillion = 10^{12}

CASE STUDY 04 \rightarrow What are the number of smart phones sold in India per year?

Population of India = 1.2 billion = 1200 million

Population above poverty line = 70% = 70% of 1200
 = 840 million

Population above 14 years = 70% = 70% of 840
 = 588 million

① Rural population (stays in city) = 70% = 70% of 588
 = 410 million

Average family size = 5. Rural household = $\frac{410}{5}$ = 82 million

Rural Mobile penetration: Avg 2 per household = 82×2 = 164 million

In rural assume new mobile is bought once in 3 years = $\frac{164}{3} \approx 55$ million

② Urban population = 30% = 30% of 588 = 176 million

Assume Avg No of Mobile per person = 1.5 = $176 \times (1.5)$ = 265 million

New mobile is bought in 1.5 years = $\frac{176}{1.5}$ = 116 million

Total mobile (new) = $55 + 265$

$$\begin{array}{r} 116 \\ 15 \overline{) 1760} \\ \underline{15} \\ 26 \\ \underline{15} \\ 90 \\ \underline{90} \\ 0 \end{array}$$

 = 320 million

Assuming 3 out of 10 are new mobiles

$$= \frac{320}{3} = 106.67 \approx 107$$

 smart phone sold in a year.