

Monday

Percentage

Q. If 20% of a no. is added itself then no. change to 6000, find the no.

$$\rightarrow 20\% = \frac{1}{5} \times 200$$

$$x \leftarrow 5 \times 200$$

$$\frac{20\%}{100\%} = \frac{200}{5}$$

$$\frac{x + 1}{5} = 6000$$

$$x + 1 = 6000 \times 5$$

$$x + 1 = 30000$$

$$x = 30000 - 1$$

$$x = 29999$$

$$x = 5000$$

Q. -- 30% -- Substracted -- 7000 - ?

$$30\% = \frac{3}{10}$$

$$\frac{10}{10} - 3 = 7000$$

$$10 = 7000$$

$$1 = 1000$$

$$10 = 10,000 \quad | = x$$

Population Model.

Q₁ (Diff. from Topic)

$$\begin{aligned}
 x &= \frac{1}{2 + \frac{1}{\frac{1}{2} + \frac{1}{\frac{1}{3} + \dots}}} \\
 &\quad \downarrow \qquad \qquad \qquad \downarrow \qquad \qquad \qquad \downarrow \\
 &= \frac{1}{2 + \frac{1}{\frac{3}{2} + \frac{1}{\frac{7}{5} + \dots}}} \\
 &\quad \downarrow \qquad \qquad \qquad \downarrow \qquad \qquad \qquad \downarrow \\
 &= \frac{1}{2 + \frac{2}{5}}
 \end{aligned}$$

(a) $x = 0.5$

(b) $x > 0.5$

(c) $x < 0.5$

(d) ~~$0 < x < 0.5$~~ $0 < x < 0.5$

(e) $0 > x > 0.5$

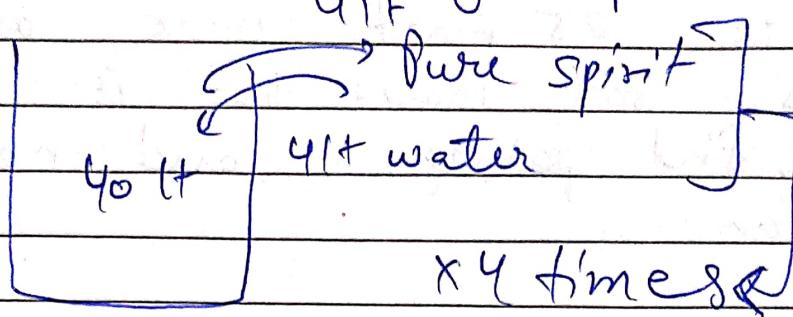
(f) None

→ Topic continues:-

Q₂ In a town population 1000, first year population ↑ by 20%, 2nd year 630 and 3rd year ↑ by 20%. Find population after 3 years?

$$\begin{aligned}
 3^2 \Rightarrow 1000 &\left(\frac{120}{100} \right) \left(\frac{70}{100} \right) \left(\frac{120}{100} \right)^2 \\
 \frac{3^2}{100} &\times 7 \qquad \qquad \qquad \frac{60}{100} \\
 \frac{144}{100} \times 7 &\Rightarrow \boxed{1008}
 \end{aligned}$$

Ex. A container of Spirit 40 lt.



$$40 \left(\frac{36}{40} \right) \left(\frac{36}{40} \right) \left(\frac{36}{40} \right) \left(\frac{36}{40} \right)$$

(A)

Exam Model :-

Q1 In a exam passing % is 36 % and a student score 110 marks and failed by 88 marks find total number of marks in exam.

I method

$$\begin{array}{c} \text{if } 36\% \text{ is } 100\% \\ \text{then } 110 \text{ is } x \% \end{array}$$

II method

$$36 \% = \frac{36}{100} = \frac{9}{25}$$

$$9 - 110 + 88$$

$$110 + 88 = 36\%$$

$$\frac{198}{36} = 1\%$$

$$\frac{198 \times 100}{36} = 550$$

$$= 100\%$$

$$1 - \frac{198}{9}$$

$$25 - \frac{198}{9} \times 25$$

$$= \boxed{550}$$

Q) In a Exam 'A' scores 45% marks that is 25 marks more and 'B' scores 30% marks that is 50 marks less. find passing % and max marks of Exam.

$$\Rightarrow 30\% + 50 = \text{Pass}$$

$$45\% - 25 = \text{Pass}$$

$$\text{Pass} = \text{Pass}$$

$$30\% + 50 = 45\% - 25$$

$$75 = 15\%$$

$$1\% = 5$$

$$\frac{100\%}{100\%} = 500$$

$$30\% \text{ of } 500 = \frac{500 \times 30}{100}$$

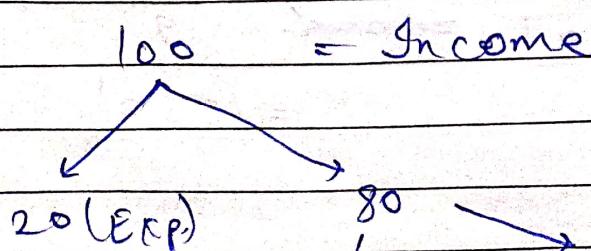
$$= 150$$

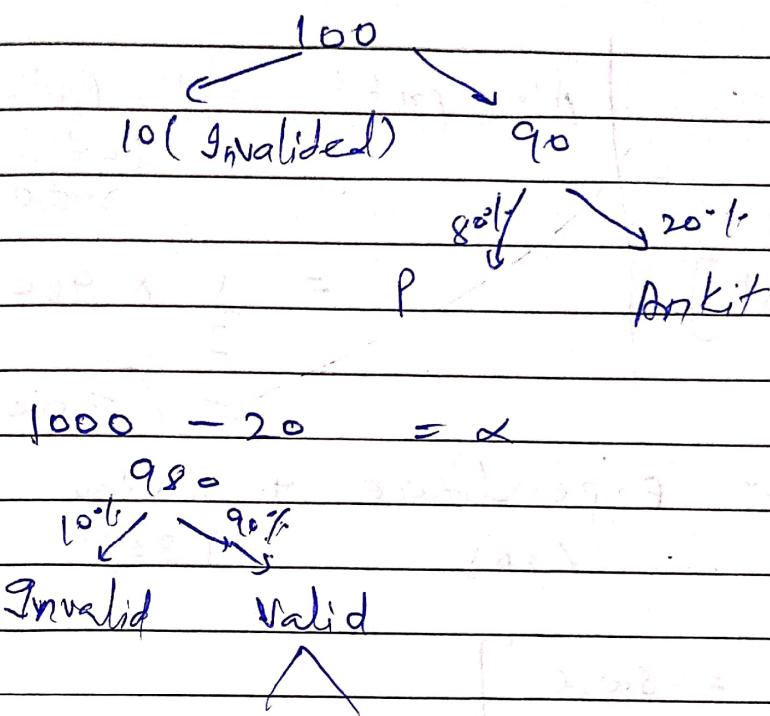
$$\% \text{ passing} = \frac{\text{Pass of marks}}{\text{Total}} \times 100$$

$$= \frac{(150 + 50)}{500} \times 100$$

$$\frac{200}{5} = 40\%$$

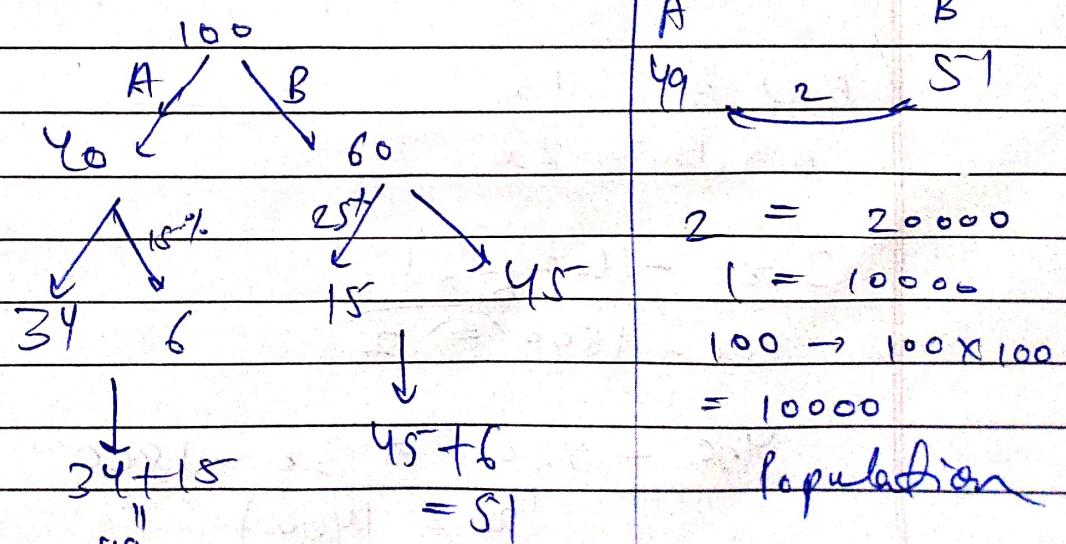
Election / Income :-



Election :-

Eg. Election of a town B/w^{*} two candidate A and B during campaign 40% voters promise to vote P and remaining to vote Q. But at day of voting 15% of voter of P went back their promise and vote to Q. and 25% of voters of Q vote for P. If P lost the election by 200 votes then find Total votes of town.

→ Let



25/9/28

Ratio and Partnership

$$\begin{array}{l}
 \text{A : B} \\
 1000 : 2000 \\
 1 : 2 = 3 \\
 [900 = \text{Profit}] \\
 \underline{1 \text{ year}}
 \end{array}
 \quad \left| \begin{array}{l}
 \text{A's profit} = \frac{\text{A's Ratio}}{\text{Total Ratio}} \times \text{Total Profit} \\
 = \frac{1}{3} \times 900 \\
 = \boxed{300}
 \end{array} \right.$$

$$\text{Income} = \text{Expenditure} + \text{Saving} \\
 (100) \qquad (20) \qquad (80)$$

$$\begin{cases} I - E = \text{Save} \\ I - S = E \end{cases}$$

\Rightarrow Ratio of Income of A:B = 2:3
 or Ex. of A:B = 1:2

If A saves 1600

B save 1800

Then find Income A/B

$$\begin{aligned}
 \text{Income} &= A = 2x = 2 \times 1400 = 2800 \text{ Rs} \\
 &B = 3x = 3 \times 1400 = 4200 \text{ Rs}
 \end{aligned}$$

$$\text{Income} - \text{Save} = \text{Exp}$$

$$\text{Exp A} = 1x$$

$$\text{or } B = 2x$$

$$2x - 1600 = 1$$

$$3x - 1800 = 2$$

$$4x - 3200 = 3x - 1800$$

$$\boxed{x = 1400}$$

Finding exp. of A/B.

$$\frac{2}{3} = \frac{1600 + x}{1800 + 2x}$$

$$3600 + 4x = 4800 + 3x$$

~~$36 = 1800$~~

$$(x = 1200) \rightarrow \text{Exp's A}$$

$$2x = [2400] \rightarrow \text{Exp's B.}$$

Ex. 30 ltrs of mix of m:w = 4:1, If 6 ltrs of water added in it Then find Resultant Ratio (New)

$$\begin{array}{c}
 30 \text{ (litr.)} \\
 M \quad \swarrow \quad \searrow w \\
 4 : 1 = 5 \\
 \frac{4}{5} \times 30 = [24 \text{ lit.}] \quad \frac{1}{5} \times 30 = [6 \text{ lit.}] + 6 \text{ lit.} \\
 24 \text{ lit.} : 12 \text{ lit.} \\
 \boxed{2 : 1} \rightarrow \text{new Ratio}
 \end{array}$$

Ex 30 lit mix m:w = 4:1, how much water should added in it so Ratio gets reversed.

$$\begin{array}{c}
 30 \text{ ltr.} \\
 m \quad \swarrow \quad \searrow w \\
 4 \quad \quad \quad 1 \\
 24 \text{ lit.} \quad \quad \quad 6 \text{ lit.}
 \end{array}$$

$$\frac{1}{4} = \frac{24 \text{ ft}}{6 \text{ ft} + w}$$

$$= 6 \text{ ft.} + w = 24 \times 4$$

$$6 + w = 96$$

$$w = 90$$

M:w

$$\star \quad [1:2]_3 = 60 \quad [2:3]_5 = 60 \quad [3:4]_4 = 60$$

$$20 : 40 \quad 24 : 36 \quad 45 : 15$$

$$20 + 24 + 45 = 90$$

$$40 + 36 + 15 = 91$$

$$89 : 91$$

Ex: Container - 1 has M:w = 1:2
 container - 2 has M:w = 2:3

Then find Resultant Ratio

$$\Rightarrow [1:2] = 3 \times 2 = 6 \quad [2:3] = 5 \times 3 = 15$$

$$[5:10] \quad [6:9]$$

$$15 : 30 \quad 6 : 9$$

$$21 \quad 39$$

$$21 : 39$$

Semester Syllabus

- * Blood Relation
- * Ratio and Partnership
- * Coding and decoding.
- * Square and cube
- * diversion
- * %
- * Average
- * Profit and loss
- * divisibility Rule + Number system [self R.S.]
- * Alphabet / Number series.

eg:-
$$\begin{matrix} A : B : C \\ 600 : 200 : 300 = 11 \quad (6+2+3) \end{matrix}$$

 Profit = 6600

Profit $A = \frac{6}{11} \times 6600$ $B = \frac{2}{11} \times 6600$

Q2 Profit = 3600 Profit (B = 1200)

Ans $6A = 2B$
 $A = \frac{B}{3}$ $= (B = 1200)$
 $C = \frac{3}{11} \times 6600$
 Profit = 1800

(Q3)
 Profit Ex. Invest = A:B = 4:5
 Profit = 1331

time A = 12 month

B = 8 month

$\Rightarrow A : B$

$$4 \times 12 : 5 \times 8$$

$$12 : 10 = 6:5$$

$$\begin{aligned} 4+5 &= 11 \\ A &= \frac{6}{11} \times 1331 \\ &= 726 \end{aligned}$$

Q.1 A, B and C start a business each investing Rs. 20,000. After 5 months A withdrew Rs. 6000, B withdrew Rs. 4000 and C invested Rs. 6000 more. At the end of the year, a total profit of Rs. 69,900 was recorded. Find the share of each.

 \Rightarrow

A

B

C

$$20k \times 5 + 14k \times 7 : 20k \times 5 + 16k \times 7 : 20k \times 5 + 26k \times 7$$

 \star

$$A:B = 2:3$$

$$A:B$$

$$B:C = 1:3$$

$$B:C$$

$$C:D = 1:2$$

$$C:D$$

$$\begin{matrix} 2 & : & 3 \\ \downarrow & & \downarrow \\ 1 & : & 3 \end{matrix}$$

$$1:2$$

$$\boxed{\begin{matrix} 2 & : & 3 & : & 9 \\ \hline A & : & B & : & C \end{matrix}}$$

$$\begin{matrix} 2 & : & 3 \\ \downarrow & & \downarrow \\ 1 & : & 3 \\ \downarrow & & \downarrow \\ 2 & : & 3 \end{matrix}$$

$$2 \times 1 : 3 \times 1 : 3 \times 3 \times 1 : 3 \times 3 \times 2$$

$$\boxed{\begin{matrix} 2 & : & 3 & : & 9 & : & 18 \\ \hline A & & B & & C & & D \end{matrix}}$$

Q2 A, B and C enter into partnership.
A invests 3 times as much as B invests, and B invests $\frac{2}{3}$ of C. At the end of the year $\frac{3}{4}$ of the profit earned is 6600, what is the share of B?

Q3 Ratio of invest of A and B is 4:5.
They invest for 12 and 8 months respectively. Total profit is Rs 1331.
Find the share of A?