



Aptitude

"Reasoning"

* "Ratio and proportion" - unit less

$$a : b$$

simple Ratio

$$\text{HCF } \{a, b\} = 1$$

here a, b

$2 : 3$ or $\frac{2}{3} = 0.666$ are same
Ratio or division unit

Ex 200 gm ~~to~~ 20 km

find the ratio of 20 km to 200 gm
Ans not defining.

gm and km different unit

~~Ex ratio of 20 kg to 2500 g~~

$$2000 \text{ kg} : 2500 \text{ g}$$

$$2000 : 2500$$

$$8 : 1$$

Ratio = part

$$A : B = 1 : 3$$

$$B : C = 5 : 3$$

$$A : B : C = ?$$

$$1 : 3 : 3$$

$$\times 5 : 5 : 3$$

$$5 : 15 : 9$$

$$A : B : C = 5 : 15 : 9$$

$$5 : 15 : 9$$

L

(2)

$$A:B = 2:2$$

$$B:C = 4:5$$

$$C:D = 2:1$$

$$\begin{array}{cccccc} A & : & B & : & C & : D \\ 2 & & 3 & & 3 & 3 \\ 4 & & 4 & & 5 & 5 \\ 2 & & 2 & & 2 & 1 \\ \hline 8 & : & 2 & 4 & : & 15 & 15 \end{array}$$

(3)

if $a:b = 2:5$, $b:c = 4:3$ and $c:d = 2:5$
find $a:d$?

$$\frac{a}{b} \times \frac{b}{c} \times \frac{c}{d} = \frac{2}{5} \times \frac{4}{3} \times \frac{2}{5}$$

$$\frac{a}{d} = \frac{16}{75}$$

(4)

if $(a+b+c):d = 13:2$ and $(b+c+d):a = 4:1$
and $(c+d+a):b = 5:1$ then find
 $a:b:c:d$?

L.C.M
30

$$(a+b+c):d = 13:2 \quad 15 \times 2$$

$$(b+c+d):a = 4:1 \quad 5 \times 6$$

$$(c+d+a):b = 5:1 \quad 6 \times 5$$

$$a:b:c:d = 30$$

$$6:5:15:4 = 30$$

$$dr \propto t^{\frac{1}{2}}$$

⊗ Inverse Ratio \Rightarrow

$$a : b$$

$$\text{Inverse Ratio} \Rightarrow \frac{1}{a} = \frac{1}{b} \Rightarrow b : a$$

$$2 : 3 \times \text{ inverse ratio } 3 : 2$$

⊗ certain distance of a, b and c

$$\text{speed } 3 : 5 : 6$$

$$\text{time}$$

$$\text{I.m.c. } 4 \frac{1}{3} : \frac{1}{5} : \frac{1}{6} = 20 : 30 : 30 \Rightarrow \frac{10}{30} : \frac{6}{30} : \frac{5}{30}$$
$$= 10 : 6 : 5 \quad \underline{\text{Ans}}$$

⊗ A B C D

$$1 : \frac{1}{3} : \frac{1}{2} : \frac{1}{5}$$

$$\text{time } 1 : 3 : 2 : 5$$

$$= \frac{30}{30} : \frac{10}{30} : \frac{15}{30} : \frac{6}{30}$$

$$\text{speed ratio } 30 : 10 : 15 : 6$$

1 cm

⊗ Duplicate Ratio (~~first 341d~~)

$$a : b \Rightarrow a^2 : b^2$$

$$a : b : c \Rightarrow a^2 : b^2 : c^2$$

$$2 : 3 \rightarrow \text{duplicate R.} = 4 : 9$$

$$1 : 2 : 3 \rightarrow = 1 : 4 : 9 \quad \text{D}$$

$$\frac{b}{a} = \frac{q}{p} \quad \frac{c}{b} = q^2$$

(*) Sub-duplicat Ratio ($\sqrt{a/b}$ or $a^{1/2}$) :-

$$a:b \rightarrow \sqrt{a} : \sqrt{b} \quad R$$

(*) $25:16 \rightarrow$ sub-duplicat
 $5:4$

(*) Triplicato ($\sqrt[3]{a/b}$) :-

$$a:b \rightarrow a^3:b^3$$

$$ex: 1:3 \rightarrow TR \rightarrow 1:27$$

(*) sub-Triplicat ($\sqrt[3]{a/b}$) :-

$$a:b \rightarrow \sqrt[3]{a} : \sqrt[3]{b}$$

$$ex: \sqrt[3]{64} : \sqrt[3]{125} \rightarrow 4:5$$

(*) Compound Ratio ($\sqrt{a/b}$ or $a^{1/2}$) :-

$$a:b \text{ & } c:d \quad \text{or} \quad \text{Compound Rat}$$

$$\frac{a \times c}{b \times d} = \frac{ac}{bd}$$

(*) Compound Ratio of

$$a:b:c \text{ & } d:e:f$$

for three variables compound ratio can't find

Q) $a:b:c \propto d:e$

$a:b \propto c:d \propto d:e$ Compound Ratio

$$\frac{a}{b} \times \frac{c}{d} \times \frac{d}{e} = \frac{ac}{be}$$

Q) $2x:2:x:3:5:18$ ratio $9:10$

then find x ,

$$\frac{2}{2} \times \frac{5}{5} = \frac{9}{10}$$

$$x = 4/3$$

Q) The compound ratio of $9:9$ & the duplicate ratio of $2:3$ & triplicate ratio of $1:2$ is $3^2:4^3:2^6$

$$\text{Ans} \quad \frac{4}{9} \times \frac{4}{9} \times \frac{1}{8} \times \frac{3}{4} = \frac{1}{54}$$

Concept: $A:B$ $B:C$ $A:B:C$
 $\rightarrow 3:4 \quad 4:5 \quad 3:4:5$
 equal

2) $A:B$ $B:C$
 $2x3:3x4 \quad 3x4:3x5$
 make equal

$$6:12:15$$

$$A:B:C \\ 6:12:15$$

$$3) A : n \quad C : D \quad A : D : C$$

$$2 : \underline{3 \times 2} \quad 1 : \underline{2 \times 3}$$

$$2 : 6 : 3 \cancel{n}$$

$$\cancel{2} : 6 \quad b : 3 : 6$$

4) plot method:

$$A : B$$

$$2 : 5$$

$$B : C$$

$$3 : 2$$

$$A : B : C$$

$$2 : 5 : 5$$

$$5 \cancel{\times}$$

$$3 \cancel{\times}$$

$$7 \cancel{\times}$$

$$6 : 15 : 35$$

(5)

$$A : B$$

$$2 : 3$$

$$B : C$$

$$4 : 5$$

$$C : D$$

$$6 : 5$$

$$A : B : C : D$$

$$2 : 3 \quad 3 : 3$$

$$2 \cancel{6} \quad 6 \cancel{5}$$

$$2 \cancel{6} \quad 2 \cancel{5} : 90 : 75$$

$$16 : 24 : 30 : 25$$

$$A \text{ RT } \text{RTI } B \text{ RTI } 2/3$$

$$B \text{ RTI } C \text{ RTI } 1/4$$

$$C \text{ RTI } D \text{ RTI } 2/5$$

Ratio of A : C

$$A : B : C : D$$

$$2 \cancel{3}$$

$$3 \cancel{3}$$

$$3 \cancel{3}$$

$$A : C$$

$$4 : 24$$

$$1 \quad 1$$

$$4 \quad 4$$

$$2 \quad 5$$

$$2 \cancel{4}$$

$$2 \cancel{4}$$

$$2 \cancel{4}$$

$$1 : 6 \cancel{8}$$

$$1 : 6 \cancel{8}$$

④ concept :- Ratio of 3 fractions

$$A : B : C$$

$$\frac{1}{2} : \frac{3}{5} : \frac{4}{7} = \\ \underbrace{\hspace{10em}}_{10 \text{ c.m.}} = 70$$

$$35 : 42 : 40$$

⑤ A : B : C

$$1 : 2.5 : 3 : 4$$

$$\frac{A}{B} : \frac{B}{C} : \frac{C}{A} \text{ Ratio}$$

$$\frac{2}{3} : \frac{3}{4} : \frac{4}{2} = \frac{8}{12} : \frac{9}{12} : \frac{24}{12} \\ \text{c.m. (12)}$$

$$\rightarrow \text{Find } A : B : C : D$$

⑥

$$A : B$$

$$B : C$$

$$C : D$$

$$\frac{4 \times 1}{4 \times 2} : \frac{5}{3} = \frac{1}{2} : \frac{5}{3} \\ \frac{5 \times 2}{6 \times 2} : \frac{3 \times 3}{4 \times 3}$$

$$4 : 3$$

$$1 : 2$$

$$10 : 9$$

$$A : B : C : D$$

$$\cancel{2} \cancel{4} : \cancel{3} : \cancel{3} : \cancel{5}$$

$$\underline{10} : \underline{10} : \cancel{5} : \cancel{9}$$

$$20 : 15 : 60 : 54$$

∴ Ratios = 10 : 9

~~concept~~

$4A = 3B = 5C$ Ratio $A : B : C$

~~process~~

$$4A = 3B = 5C = k$$

$$A = k/4$$

$$B = k/3$$

$$C = k/5$$

$$A : B : C$$

$$\frac{k}{4} : \frac{k}{3} : \frac{k}{5} \quad 15 : 20 : 12 \\ 1 \cdot \text{cm} = 60$$

Q:

$$4A = 3B = 6C = 3D \quad 1 \cdot \text{cm} = 60$$

$$A : B : C : D = 20 : 15$$

$$15 : 12 : 10 : 20$$

~~concept~~

$$A = 200 \text{ cm}$$

$$B = 150 \text{ cm}$$

$$C = 100 \text{ cm}$$

$$D = 200 \text{ cm}$$

$$2A = 3B = 1.5C$$

$$4A = 6B = 3C$$

$$1 \cdot \text{cm} = 12$$

$$A : B : C$$

$$3 : 2 : 4$$

~~C.P.~~

$$A : B : C$$

$$2 : 3 : 5$$

$$\frac{A+D}{C} : \frac{B+C}{A} : \frac{A+C}{B}$$

$$\frac{5}{5} : \frac{2}{2} : \frac{3}{3} \quad 1 \cdot \text{cups}$$

$$20 : 120 : 70$$

$$3 : 12 : 7$$

$$\frac{100}{3} \times \frac{100}{5} = 6k$$

$$\frac{100}{20} \times 5 = 250$$

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CP
~~X~~

$$a+b : b+c : c+a = 36$$

$$3 : 5 : 4$$

$$a=2 \quad 6$$

$$a+5=36$$

$$b=2 \quad 12$$

$$a=31$$

$$c=2 \quad 18$$

$$a+b = 3k \rightarrow 3 \times 6 = 18 + 18 \rightarrow 16 (a+b=18)$$

$$b+c = 5k \rightarrow = 30$$

$$c+a = 4k \rightarrow = 24$$

the $c =$

$$2(a+b+c) = 12k \quad 36 - 18 = 18$$

$$a+b+c = 6k$$

$$3k = 6k$$

$$k = 6$$

(one side)

$$33\frac{1}{3} \cdot A = B \times 0.5 = 25\% \cdot C$$

$$A : B : C = \frac{1}{3} A = \frac{1}{2} B = \frac{1}{4} C = k$$

$$A = 3k$$

$$B = 2k$$

$$C = 4k$$

$$A : B : C$$

$$3 : 2 : 4$$

$$66\frac{2}{3} \cdot A = 83\frac{1}{3} B = 20\% C \quad A : B : C$$

$$\frac{3}{2} \cdot \frac{2}{3} = \frac{5}{6} = \frac{1}{5} C = k$$

$$A : B : C$$

$$\frac{3}{2} : \frac{5}{3} : \frac{5}{1}$$

$$15 : 12 : 10 \quad 1. \text{ way} \quad 18$$

$$\frac{24}{25+c} = \frac{24}{3}$$

$$3 \overline{) 9, 6, 1, 9} \quad 3 \overline{) 9, 6, 1, 4}$$

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CP 8.

$$\frac{A}{B+C} = \frac{2}{3} \cancel{) 5 \times 12} \quad \frac{B}{A+C} = \frac{5}{7} \cancel{) 12 \times 8}$$

$$A : B : C$$

$$24 : 25 : 11$$

Q)

$$\frac{A}{B+C} = \frac{3}{5} \cancel{) 8 \times 5} = 90$$

$$\frac{B}{A+C} = \frac{5}{4} \cancel{) 5 \times 8} = 40$$

$$A : B : C$$

$$15 : 8 : 17$$

$$15 + 8 + 17 = 40$$

$$49 : 49$$

$$\frac{A}{B+C+D} = \frac{2}{7} \cancel{) 9 \times 7} = 23$$

$$A : B : C : D$$

$$8 : 6 : 9 : 13$$

$$\frac{B}{A+C+D} = \frac{5}{5} \cancel{) 6 \times 5} = 30 \text{ cm}$$

23

$$\frac{C}{A+B+D} = \frac{1}{3} \cancel{) 4 \times 9} = 12$$

$$\frac{x}{y} = \frac{3}{7}$$

$$\frac{3x+5y}{5x-2y} = \frac{3 \cdot 3 + 5 \cdot 4}{5 \cdot 3 - 2 \cdot 4} = \frac{29}{7} g$$

Q: If $\frac{29+5b}{29-5b} = 5$ then a:b will be equal to.

$$\frac{29+5b+29-5b}{29-5b+39+5b} = 5$$

$$\frac{29+5b}{29-5b} = 5$$

$$29+5b = 5(29-5b)$$

$$\frac{a}{b} = 5 : 2$$

Q: 60% of A = $\frac{3}{4}$ of B, then a:b

$$\frac{60}{100} A = \frac{3}{4} B$$

$$\therefore \frac{3}{5} A = \frac{3}{4} B$$

$$\frac{A}{B} = \frac{15}{12} = \frac{5}{4}$$

Q: $a:b = 5:7$ and $c:d = 29:3b$ then

$$a:c : ad$$

$$\frac{a}{b} = \frac{5}{7}, \quad \frac{c}{d} = \frac{29}{3b} = \frac{29}{3 \times 5} = \frac{29}{15}, \quad \frac{ad}{cd} = \frac{10}{21}$$

Q $x:y = y:z$ then $(x^2:y^2)$ will be.

$$\frac{x}{y} = \frac{y}{z} \Rightarrow y^2 = xy$$

$$x^2:y^2$$

$$x^2:xy$$

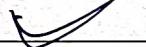
$$x:y \quad \underline{\text{Ans}}$$

Q The greatest ratio in
 $10:18; 2:21; 12:16; 8:20$

$$\frac{10}{18} \quad \frac{2}{21} \quad \frac{12}{16} \quad \frac{8}{20}$$

$$\frac{5}{9} \quad \frac{1}{3} \quad \frac{3}{4} \quad \frac{2}{5}$$

$$551. \quad 331. \quad 951. \quad 501.$$



$$\underline{\text{Ans}} = 12:16$$

Q if $20\% \text{ of } (P+Q) = 50\% \text{ of } (P-Q)$
then find the ratio $P:Q$.

Componendo & Dividendo on

$$\frac{P+Q}{P-Q} = \left(\frac{5}{2}\right) + 7$$

3

$$\frac{P}{Q} = \frac{7}{3} \quad \underline{1}$$

Q if $a:b = c:d = e:f = 1:2$ then
 $(2a+5c+7e):(3b+5d+7f)$

$$\frac{a}{b} = \frac{c}{d} = \frac{e}{f} = \frac{1}{2}$$

$$\frac{3a+5c+7e}{3b+5d+7f} = \text{ratio addi} = 15 \times \frac{1}{2} = \frac{15}{2}$$

$$= \frac{1}{2} A$$

Q if A is 40% greater than B,
B is 20% less than C. Then A:C
is

$$\text{let } B = 10$$

$$\text{then } A = \frac{10 \times 40}{100} = 4 + 10 = 14 = A$$

$$C = 10$$

$$B = \frac{10 \times 20}{100} - 2 = 10 - 2 = 8 = B$$

$$A:B:C$$

$$14:10:10$$

$$8 \quad 8 \quad 10$$

$$\underline{112:80:100}$$

$$A:c =$$

$$\frac{A}{c} = \frac{112}{100} = \frac{28}{25} \rightarrow$$

Q. If $\frac{a}{b} = \frac{2}{3}$ and $\frac{b}{c} = \frac{4}{5}$

then $\frac{a+b}{b+c}$ will equal to.

$$\frac{a}{b} = \frac{2}{3} \times 4 = \frac{8}{12} \quad \text{parte } b \neq 0$$

$$\frac{b}{c} = \frac{4 \times 3}{5} = \frac{12}{15} \quad \text{equal ben} \neq 0$$

$$\frac{a+b}{b+c} = \frac{8+12}{12+15} = \frac{20}{27} = \frac{16}{27}$$

Q. $2^{1.5}, 2^{0.5}$

$$\frac{2^{3/2}}{2^{1/2}} = \frac{2}{1} \cancel{4}$$

Q. The ratio of 5th term & 6th term of the sequence 1, 3, 6, 10 ...

$$1 : 2 : 3 : 6 : 10 : 15 : 21$$

$$5 : 7$$

$$1 + \frac{1}{3} + \frac{1}{6} = \frac{6+2+1}{6} = \frac{9}{6} = \frac{3}{2}$$

Q. If 14250 is divided between A and B in the ratio of 3:2 then A will get.

$$A = 3, B = 2, t = 5$$

$$14250 \times \frac{3}{5} = 5200 \text{ Rs}$$

Q. If 2340 is divided into three parts which are in the ratio 1:1:1 then the middle part -

$$1 + \frac{1}{3} + \frac{1}{6} = 6 : 2 : 1 \text{ Ratio}$$

$$2340 \times \frac{2}{9} = 520 \text{ Rs}$$

Q. A certain amount is distributed among A, B, and C. A gets $\frac{1}{3}$

and B gets $\frac{1}{4}$ of the whole amount if C gets 252 then B gets.

$$\frac{A}{A+B+C} = \frac{3}{16} \quad A : B : C \\ 3 : 4 : 9$$

$$\frac{B}{A+B+C} = \frac{4}{16} = \frac{1}{4} \quad 9 = 252 \\ 16 - 4 + 3 = 9 \quad \left. \begin{array}{l} 1 \rightarrow 28 \\ 1 \rightarrow 28 \\ \text{then} \\ 4 \neq 4 \times 28 \end{array} \right\} \\ 16 \rightarrow \\ 1 \rightarrow 28 \\ = 112 \\ \cancel{28}$$

O: If ratio of two numbers is 1:3
their sum is 240, the diff is

$$x + 3x = 240$$

$$4x = 240$$

$$x = 60$$

$$2x = 120$$

O: If ratio of two numbers is 10:7
and their difference is 105
then their sum is.

$$10x - 7x = 105$$

$$3x = 105$$

$$x = 35$$

$$10x = 10 \times 35 = 350$$

$$17x = 17 \times 35 = 595$$

(*) Fighting Concept :-

It has 4 type:

sign

same

rel to

(→)

other

wise (+)

$$\begin{array}{c}
 \begin{array}{c}
 \begin{array}{c}
 a : b \\
 -x_1 -x_2 \\
 \text{---} \\
 c : d
 \end{array}
 & \left\{ \begin{array}{c} a : b \\ +x \quad +x \\ c : d \end{array} \right. & \left\{ \begin{array}{c} a : b \\ -x +x (+) \\ c : d \end{array} \right. & \left\{ \begin{array}{c} a : b \\ +x : -x_4 \\ c : d \end{array} \right.
 \end{array}
 \end{array}$$

$a - b = c - d$
 and
 अत आ रहा $b \times c$ से तो

Q:- Two numbers are in the ratio 5:7
 on diminishing each of them by 40 the becomes in the ratio 17:27
 The difference of the number is

$$\begin{array}{c}
 \begin{array}{c}
 9 : b \\
 [5 : 7] - \text{base Ratio} \\
 -40 \quad -40 \\
 17 : 27
 \end{array}
 \end{array}$$

$$135 - 119 = (480 - 620) \quad (27 - 40) - (17 \times 40)$$

$$16^4 = 10 \times 40^1$$

$$4 = 100$$

$$16 : 1 = 25$$

$$\text{the } 2 = 2 \times 25 = 50 \quad \underline{\text{Ans}}$$

Q: A and B have money in the ratio 2:1 if A gives 2 to B then money will be in the ratio 1:1 what were the initial amount they had.

$$A : B$$

$$\begin{array}{r} 2x : 1x \\ -2 \quad +2 \\ \hline 1 : 1 \end{array} \quad 2x4 = 8 \times 1$$

$$8 = y$$

$$2-1 = 2(1+1)$$

$$A = 8$$

$$B = y$$

$$1 = 4$$

Rg

Q: A sum of money is to be distributed among P, Q, and R in the ratio 6:19:7 if R give 200 Rs from his share to Q, then ratio of P, Q and R become 3:10:3 what was the total sum?

$$P : Q : R = 32 \times 200$$

$$\begin{array}{r} 6 \quad 19 \quad 7 \\ +200 \quad -200 \\ \hline 13 \end{array} = 6400$$

$$13 = 2600$$

$$I \rightarrow 2600$$

Q:- The salary of P, Q, R in the ratio $3:4:5$ if the increment of 10% , 15% , 20% respectively given to them find the new Ratio of their salary.

$$3 : 4 : 5$$

$$\begin{array}{r} 300 \\ + 30 \\ \hline 330 \end{array} \quad \begin{array}{r} 400 \\ + 60 \\ \hline 460 \end{array} \quad \begin{array}{r} 500 \\ + 100 \\ \hline 600 \end{array}$$

$$330 : 460 : 600$$

Q:- A and B have monthly income in the ratio $5:6$ expenditure in the ratio $3:4$ if save 1800 and 1600 respectively then find the monthly income.

$$5 : 6$$

Income = Expt + Saving

$$-1800 \quad -1600$$

$$2 \quad 3 \quad 4$$

$$2 = 7200 - 4800$$

$$1 = 1200$$

$$B = 1200 \times 6 = 7200$$

1

Join Base of Question

Rishi (denomination)

	D	O P	25 P	I R R	2 R X	C R P
no. of Comp.	10	4	2	1	2	
	<u>500</u>					
	<u>100</u>	<u>400</u>				
	<u>5 R P</u>	<u>1 R P</u>	<u>2 R P</u>	<u>2 R P</u>	<u>10 R P</u>	
	Total = 20 R P (Value)					

\times no. of coins = value
0.16 - cost

0 310 RF 128 50P 10P
? : 5 : ?

find of no of coin for each denomination

I R E S O P I O P

~~2 x 50
150~~ ~~5 x 50
250~~ ~~7 x 50
350~~ 4

200 p 200 p 70 p =

$$629P = 310 \times 1000 = 31000P$$

$$\underline{I} = 50$$

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$$\underline{5 \times 2} = 10 \quad 9 \times 89 = 801 \quad 4 \times 81 = 324 \quad 912$$

$$50 + 100 + 40 = 14200 \text{ P}$$

~~515 - 41250~~

(Q)

2 R

5 R

10 R

$$\text{val } 3 : 4 : 6$$

total no. of coins = 290

soln. no. of each coin = V/D

$$\frac{3}{2} : \frac{4}{5} : \frac{6}{10}$$

$$15 : 8 : 6$$

$$29 \rightarrow 290$$

$$1 \rightarrow 10$$

$$300 \quad 400 \quad 600$$

proportion (~~equation~~)

$$a : b :: c : d$$

two ratio is equal

$$\frac{a}{b} = \frac{c}{d}$$

(Q)

$$23 : x :: 4 : 9$$

$$\frac{23}{x} = \frac{4}{9} \Rightarrow x = \frac{9}{4}$$

Q $4 : x :: x : 16$

$$\frac{4}{x} = \frac{x}{16}$$

$$x^2 = 64$$

$$x = 8 \text{ Ans}$$

proportion

~~Given~~

$$A \underset{k}{\sim} B$$

$$A = k B$$

Ex $A \underset{k}{\sim} B$

$$A = 16$$

$$\text{the } A = 25$$

$$B = 12$$

$$B = ?$$

$$A = k B$$

$$16 = k 12$$

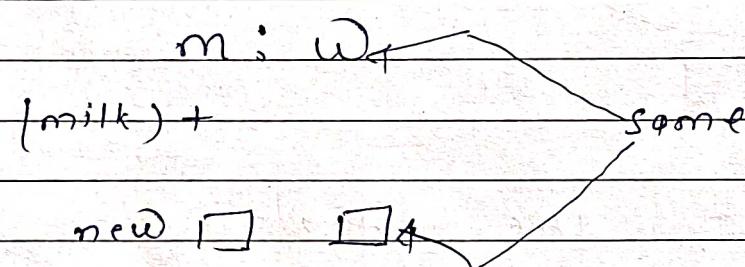
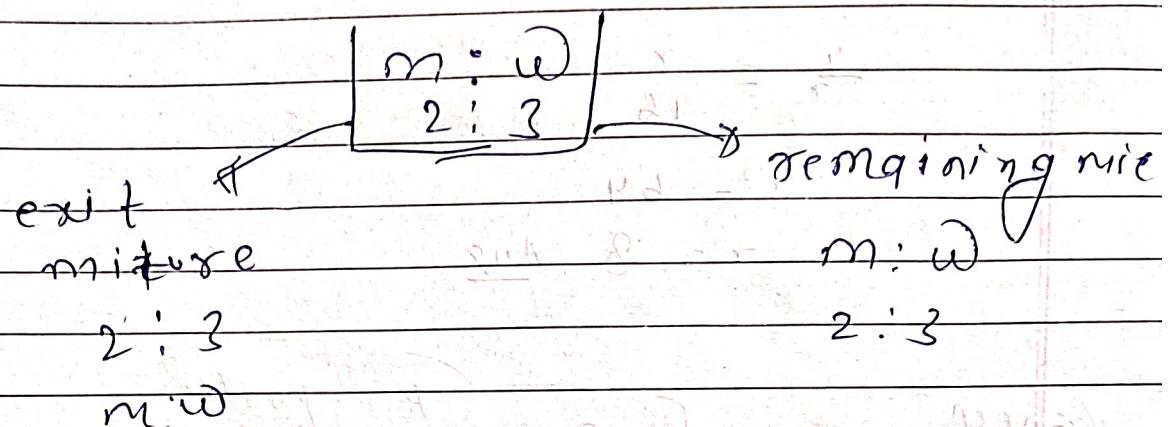
$$k = \frac{16}{12} = \frac{4}{3}$$

$$A = k B$$

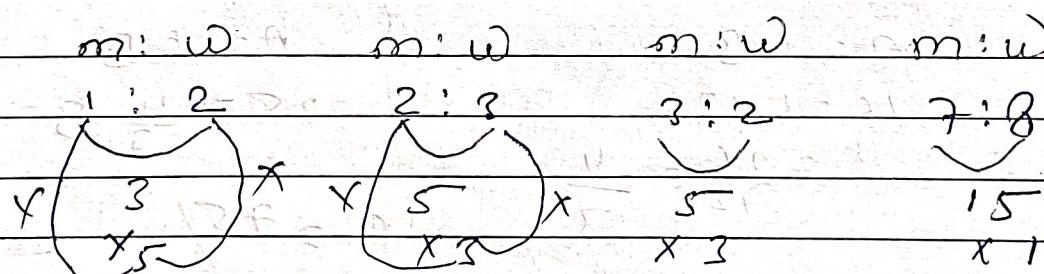
$$25 = \frac{4}{3} B$$

$$B = 75/4$$

(★)

Water milk problem:

Ex



m	w	volume of mix	final m:w
5	10		
6	9		
9	6		
7	8		
27	33		

$$9:11$$

Q

orange juice

mango juice

$$\textcircled{1} \quad 33\frac{1}{3}\%$$

$$\textcircled{5} \quad 83\frac{1}{3}\%$$

$$\frac{1 \times 2}{3 \times 2} = \frac{2}{6}$$

$$\frac{5}{6}$$

equal

$$\textcircled{7} \quad \frac{2}{7} \times 100 = 28.57\%$$

Q

Simple Interest

$$\begin{array}{|c|} \hline m : w \\ \hline 1 : 2 \\ \hline \end{array}$$

$$\begin{array}{|c|} \hline m : w \\ \hline 2 : 3 \\ \hline \end{array}$$

mix अर्थात् $\frac{9}{14}$ वा $64\frac{1}{2}\%$
 वा $64\frac{1}{3}\%$ वा $37\frac{1}{2}\%$

$$\begin{array}{|c|} \hline 3 \\ \hline \boxed{x 5} \\ \hline \boxed{x 2} \\ \hline \end{array}$$

$$\begin{array}{|c|} \hline 5 \\ \hline \boxed{x 3} \\ \hline \boxed{x 1} \\ \hline \end{array}$$

final mixture

m

10

w : m

20 : 10

6

9

$$\overline{16 \text{ min.} - 29 (\text{A})}$$

~~(X)~~

next concept :-

millman \rightarrow ap shading on CP

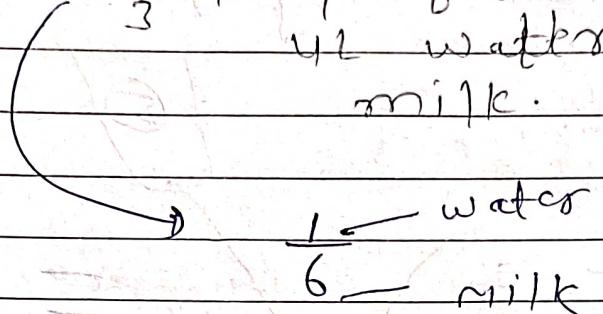
20% profit

$$\frac{1}{5} \rightarrow \text{profit}$$

$$\begin{array}{|c|} \hline m : w \\ \hline 5 : 1 \\ \hline \end{array}$$

Q)

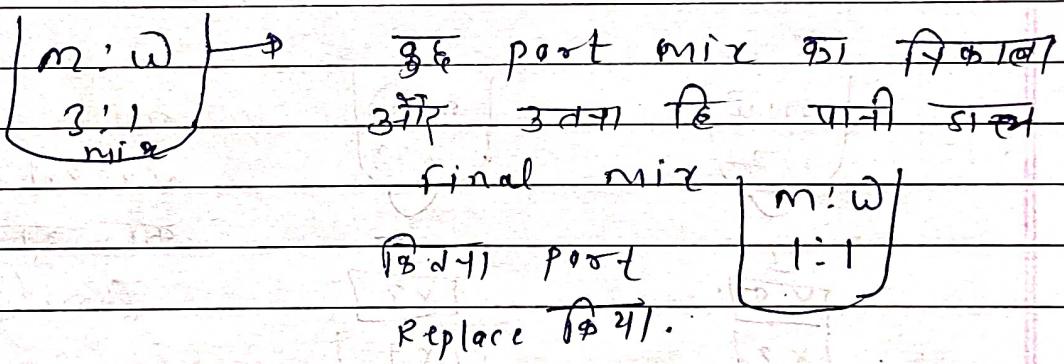
$16 \frac{2}{3} \text{ l. profit of a milkman}$
 $\text{4 l water mixed pure}$
 milk.



$$\begin{array}{rcl} 4l & \rightarrow & 1 \\ \cancel{6} & & \cancel{6} \end{array} \quad \begin{array}{rcl} 1 & \rightarrow & 4l \\ \cancel{6} & & \cancel{6} \end{array} \quad 4 \times 6 = 24l$$

$$\text{pure milk} = 24l$$

(*) Replacement :— [initial = final]



$$m : w$$

$$3 : 1 \text{ initial}$$

③ $(3 : 1) \rightarrow \text{remaining}$

~~3/4~~

$$+ (w)$$

$$3 \times \left(1 \frac{1}{3} - 1\right) = \frac{2}{6} = \frac{1}{3}$$

Q

 $m : \omega$ $4 : 1$

initial

find $m : \omega$ after 1st mix

3rd mix

fb mix

 $m : \omega$ $2 : 1$ $4 : 1$ $+ (\omega)$ $2(2 : 1)$ $4 : 2 = 2 : 1$

normal

$$\frac{1}{6} \text{ Ans}$$

Q

120L mix $A_1 : \omega$

mix after 1st

 $4 : 1$ 2nd mix $A_2 : \omega$

2nd new mix

 $A_1 : \omega$ $3 : 1$ $A_1 : \omega$ $3 \times (4 : 1)$ $12 : 3$ $+ (\omega)$ $4 \times (3 : 1)$ $12 : 4$

$$= \frac{1}{16}$$

 $16 \rightarrow 120$ $1 \rightarrow 15/2 = 7.5 \text{ L}$