CLASS 22 — MIXTURE & ALLEGATION

(#) Speed — Speed → Speed → $S = \frac{D}{T}$ → Time : Time

Mean वाली चीज जिसके Respect में निकाली जाती है, ratio उसी का आता है।

$S = \frac{D}{T}$, speed को time के Respect में निकालते हैं। So. Time का ratio आयेगा।

(#) P/. — L/. → P/L/. → $P = \frac{P}{CP} \times 100$ → CP : CP

(#) CP — CP → CP → Quantity : Quantity

(#) 10/. — 40/. → 35/. → $\frac{35}{100}$ → Mixture : Mixture

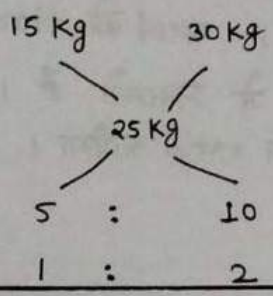
(#) 20 Rs/kg — 40 Rs/kg → 35 Rs/kg → 5 : 15 → 1 : 3

(#) 20 Rs/kg — 40 ? Rs/kg → @ 35 → 5 : 15 → 1 : 3

(#) 20 — 40 → ? 35 → 5 : 15 → 1 : 3

40 − 20 = 20 → 1 : 3 → 5 : 15

① if the avg. weight of a class is 15 kg and the avg weight of another class is 30 kg. then find the ratio of the students of the first class to another class students when the avg. weight of both the classes is 25 kg.



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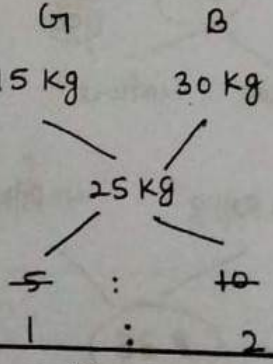
② The avg. weight of girls is 15 and the avg weight of boys is 30 and the avg weight of boys and girls both is 25 kg. If the no. of boys are 12, then the no. of girls is :



$2 \rightarrow 12$

$1 \rightarrow 6$

No. of Gals $= 6$

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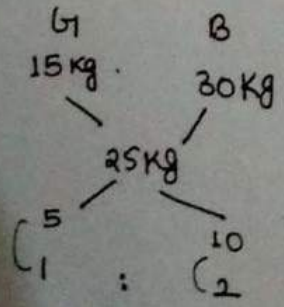
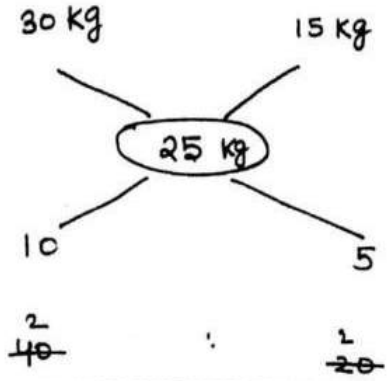
③ The ratio of no. of girls to no. of boys is 1:2. If the avg wt. of the boys is 30 kg and the avg wt. of both the boys and girls be 25 kg, then the avg wt. of girls is :



④. The avg weight of a class of 40 students is 30 kg and the avg. weight of a class of 20 students is 15 kg. find the avg weight of both the classes combined.



30 − 15 = 15

2 : 1

10 5

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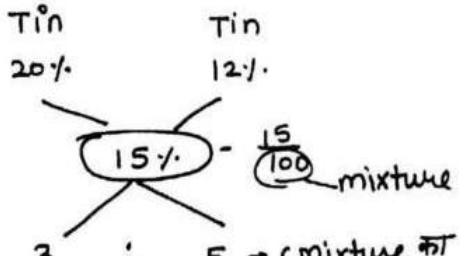
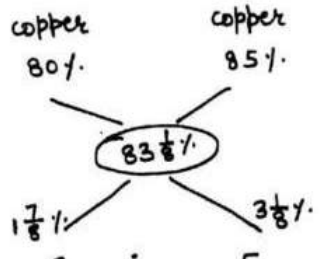
⑤ In an alloy 80% is copper and the remaining tin. In an another alloy, copper is 85% and tin is 12%. In what ratio should the two alloys be mixed so that the new mixture must have 15% tin. Also find the percentage of copper in the new mixture.





85 − 80 = 5

5

3 : 5

$5\times\frac{3}{8}$: $5\times\frac{5}{8}$

$\frac{15}{8}$: $\frac{25}{8}$

$3\frac{1}{8}$%

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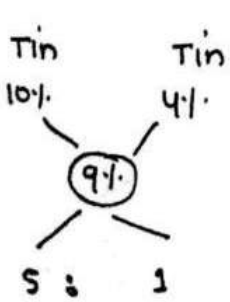
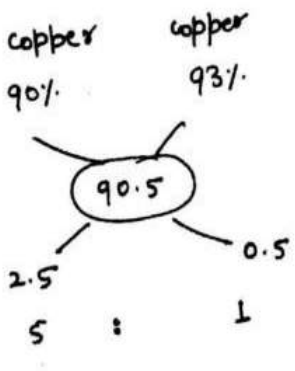
⑥ An alloy contains 90% copper and 10% tin, in another alloy copper is 93% and 7% is tin. In what ratio should both alloys be mixed so that the newly formed alloy contains 9% tin and also find the % of copper in this:



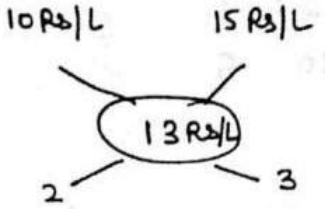


93 − 90 = 3

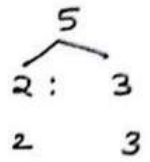
5 : 1

2.5 0.5

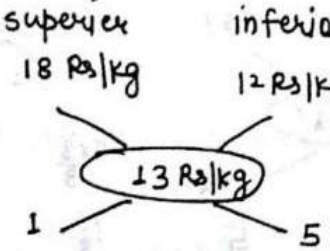
(7) Two varieties of milk with different prices is mixed in the ratio 2:3. The price of 1st type of milk is Rs 10 per litre while the price of 2nd type of milk is 15 Rs/litre. The average price of the mixture:



2 : 3

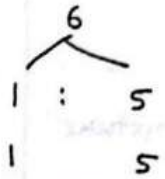


(8) 5 kg of superior quality of rice is mixed with 25 kg of inferior quality rice. The price of superior quality & inferior quality rice is Rs 18 & Rs 12 respectively. The avg price per kg of the mixture is:

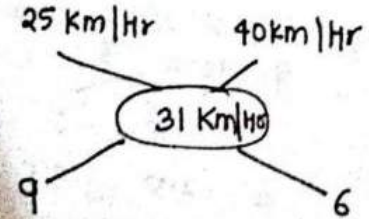


~~5~~ ~~25~~

1 : 5

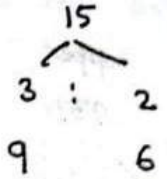


(9) Bhuvnesh travels 30 minutes at the speed of 25 Km/Hr. Further he travels 20 minutes at the speed of 40 km/Hr. Find his avg. speed.



~~30~~ : ~~20~~

3 : 2



(10) Bhuvnesh covered 150 km distance in 10 Hours. The 1st part of his journey he covered by car, then he hired a rickshaw. The speed of car & rickshaw is 20 km/Hr and 12 km/Hr respectively. The ratio of distance covered by car & the rickshaw respectively are :

Car 20 km/Hr, Rickshaw 12 km/Hr

$\frac{150}{10} = 15$ km/Hr

15 km/Hr

3 : 5 (Time ratio)

C	R
20 × 3	12 × 5
60	60
1	1

(11) A milkman has two type of milk. In the 1st container the % of milk is 80% and in the 2nd container the percentage of milk is 60%. If he mixes 28 litres of the milk of first container to the 32 litre of milk of the 2nd container, then the % of milk in the mixture is :

80% 60%

$69\frac{1}{3}\%$

$\frac{28}{3}$ $\frac{32}{3}$

28 : 32

7 : 8

20

7 : 8

$20 \times \frac{7}{15}$ $20 \times \frac{8}{15}$

$\frac{28}{3}$ $\frac{32}{3}$

(12) A sum of Rs 41 was divided 50 student. If each boy get 90 Paise & each girl got 65 paise. find the no. of boys.

Boy 90 P, Girl 65 P

82 P

17 : 8

×2 ×2

34 boys 16 Girls.

$\frac{410}{5} = 82$ P

17 + 8 = 25 → 50

1 → 2

90 P Boy 4500

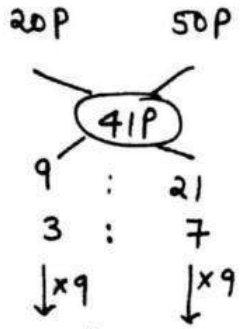
65 P Girl 3250 P

4100 P

85 : 40

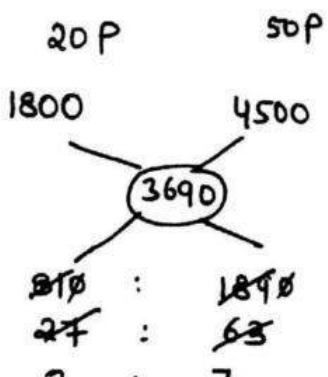
17 : 8

(13) A sum of Rs ~~39.60~~ 36.90 is made up of 90 coins that are either 20 paise coins or 50 paise coins. find out how many 20 paise coins are there in the total amount.

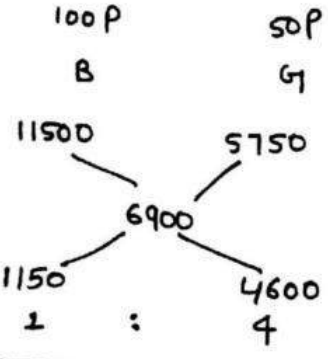


41
~~3690~~
90

10 → 90
1 → 9



(14) Rs 69 were divided among 115 students so that each girl gets 50 paise less than a boy. Thus each boy received twice the paise as each girl received. The no. of girls in the class is :



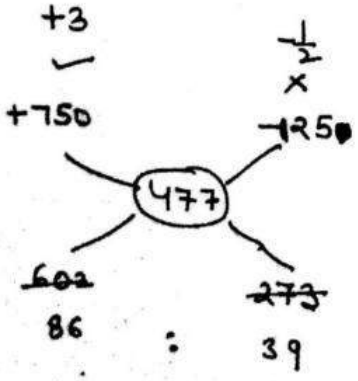
B G
2x x

2x − x = 50
x = 50

1+4 ⇒ 5 → 115
1 → 23
No. of Girls → 23×4 = 92

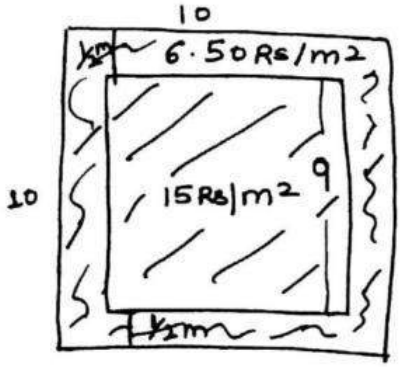
~~100P~~ ~~50P~~
~~B~~ ~~G~~

(15) A student get +3 marks for each right answer and −0.5 mark for each wrong answer in an exam consists of 250 questions. If the students gets 477 marks in the exam, find the no. of wrong questions attempted by student.



86+39
= 125 → 250
1 → 2
wrong Ques =
39×2 = 78

(16) In the centre of a square room of side 10 metre, there is a square carpet and the rest of the floor is covered with cloth. If the cost of covering the full floor is 1338.50 Rs and the price of carpet and cloth is 15 Rs/m² and 6.50 Rs/m² respectively. find the width of the cloth border.



Area = 100 m²

carpet	cloth
15 Rs/m²	6.50 Rs/m²

13.3850 Rs/m² → 1338.50 / 100

carpet area = 81 m²

carpet side = 9 m

width of cloth = 10 − 9 = 1 m

$\frac{1}{2}$ m (both side ✓)

81 : 19 (Ratio of Area)

81 → 81 carpet

19 → 19 cloth.

100 → 100

1 → 1

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(17) In a Delhi zoo, there are deers & ducks. if the heads are counted there are 180 while the legs are 448. What will be the no. of deers in the zoo.

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+2	+4
Duck	Deer
360	720

448

~~272~~ : ~~88~~ (Ratio of animals)

34 : 11

34+11 → 45 → 180

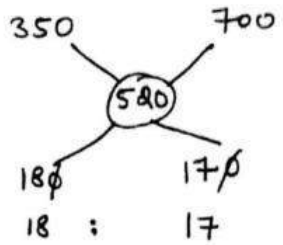
1 → 4

No. of deers =

11 × 4 = 44 Ans

(18) In a MCD parking there are some two wheelers & rest are four wheelers. if wheels are counted, there are total 520 wheels but the incharge of the parking told me that there are only 175 vehicles. if no vehicle has a stepney then the no. of two wheelers is :

2 wheelers 4 wheelers



18 : 17

$35 \rightarrow 175$

$1 \rightarrow 5$

No. of two wheelers $= 18 \times 5 \Rightarrow 90$ Ans

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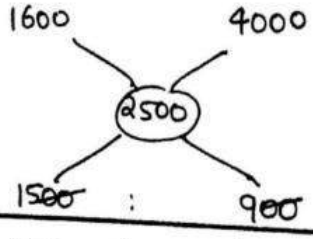
(19) In my pocket there are Rs 25 consisting of only the denominations of 20 paise & 50 paise. Thus there are total 80 coins in my pocket. The no. of coins of the denomination of 50 paise is :

20p 50p



$15+9 \Rightarrow 24 \longrightarrow 80$

$1 \longrightarrow \frac{80}{24} = \frac{10}{3}$

No. of 50p coins $=$

$3 \times \frac{10}{3} = 30$ coins Ans

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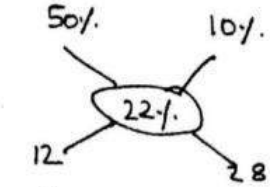
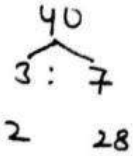
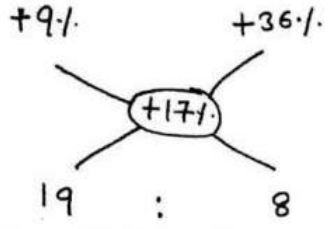
(20) Rakesh yadav reader publication sold the 30% books at the profit of 50% and 70% books at the profit of 10%. The avg profit percent of the publication shop is, if it sells only these two kinds of books.



3 : 7



(21) A bus agency has 108 buses. He sold some buses at 9% P and rest at 36% profit. Thus he gains 17% on the sale of all his buses. The no. of buses sold at 36% P is :

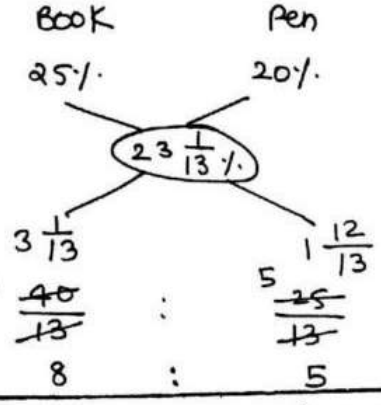


27 ⟶ 108

1 ⟶ 4

No. of Buses sold at 36% profit = $8 \times 4 = 32$

(22) A man purchased a pen & book for Rs 1300. He sold the pen at a profit of 20% and the book at a profit of 25%. In this way, his total profit was $23\frac{1}{3}$%. find the CP of book.

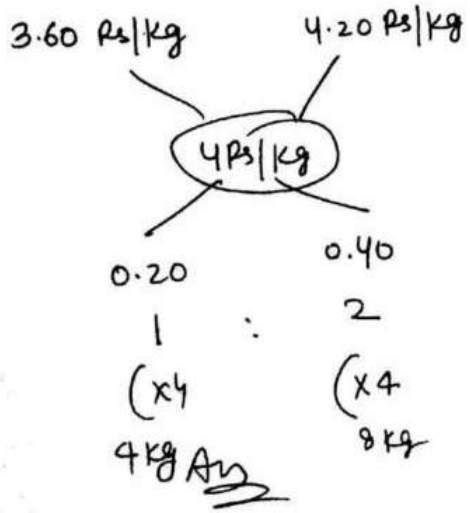


13 ⟶ 1300

1 ⟶ 100

cost price of Book = $8 \times 100 = 800$

(23) How many kg of sugar worth Rs 3.60 per kg should be mixed with 8 kg of sugar worth Rs 4.20 per kg such that by selling the mixture at Rs 4.40 per kg. there may be a gain of 10%.



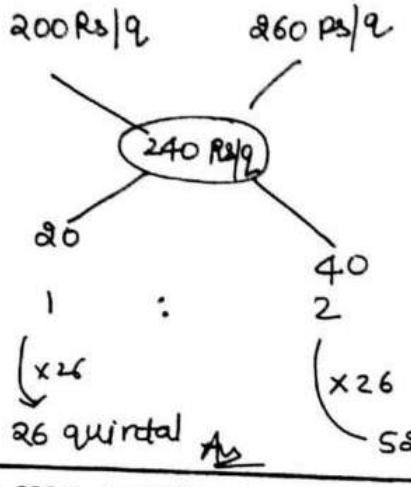
10% = $\frac{1}{10}$

SP = 4.40 Rs/kg ⟵ (×0.4) 11

CP = 4.00 Rs/kg ⟵ (×0.4) 10

Ans

(24) A shopkeeper purchased two qualities of pulses at the rate of 200 Rs per quintal and Rs 260 per quintal. If 52 quintal of the 2nd quality, how much pulse of the 1st quality should be mixed so that by selling the resulting mixture at Rs 300 per quintal, he gains a profit of 25%.



SP = 300

5 — 300

1 — 60

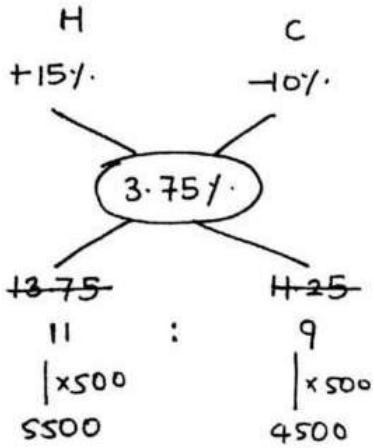
CP = 4 × 60 = 240

+1 — P

4 — CP

SP = 5

(25) A man purchased 5 Horses and 10 cows of Rs 10,000. He sells the horse at 15% P and cow at 10% Loss. find the cost of each horse if he earns a profit of 375.



P% = $\frac{375}{10,000} \times 100$

= 3.75%

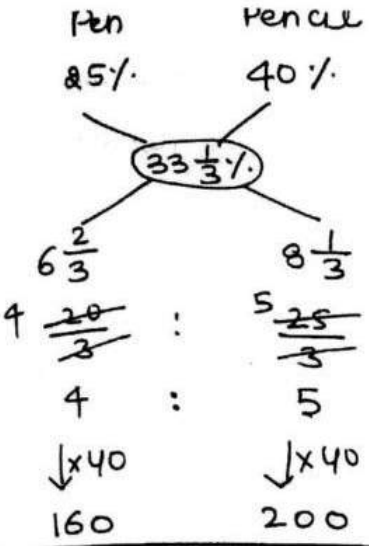
1 H + 9 = 20 — 10,000

1 — 500

CP of 1 Horse = $\frac{5500}{5}$ = 1100

CP of 1 cow = $\frac{4500}{10}$ = 450

(26) 20 pens and 16 pencils are purchased by a man for Rs 360 He sold the pens at 25% P and pencils at $\frac{7}{5}$ of its cost price. find the price of each pencil, if he earns profit of Rs 120 at the end:



$\frac{1}{5}$ → cp $\frac{2}{5} \times 100 = 40\%$. P

$P\% = \frac{120}{360/3} \times 100$

$4+5 = 9 \longrightarrow 360$

$1 \longrightarrow 40$

Price of 1 pencil $= \frac{200}{16}$

$= 12.50$ Rs

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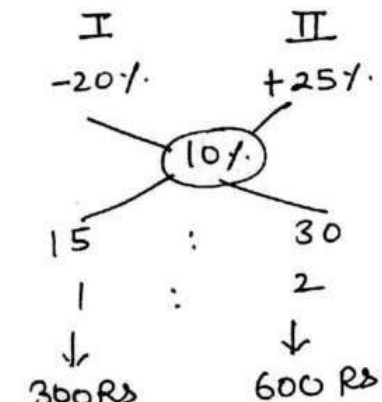
(27) A man purchased two chairs in Rs 900, he sells the 1st chair at $\frac{4}{5}$ of its cost price while the 2nd chair is sold at $\frac{5}{4}$ of its cost price. if during the whole transaction he earns a profit of 90 Rs, find the cost price of cheaper chair.



$\frac{4}{5}$ — SP → CP $\frac{-1}{5} \times 100 = -20\%$.

$\frac{5}{4}$ — SP → CP $\frac{+1}{4} \times 100 = +25\%$.

$P\% = \frac{90}{900} \times 100 = 10\%$.

$3 \longrightarrow 900$

$1 \longrightarrow 300$

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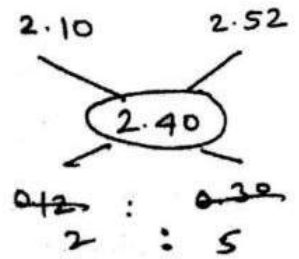
(28) A mixture of sugar is sold at Rs 3.00 per kg. This mix. is formed by mixing the sugar of Rs 2.10 and Rs 2.52 per kg What is the ratio of cheaper to the costlier quality in the mixture if profit of 25% is earned ?



Ans

$\frac{+1}{4}$ → CP

SP → 5 $\longrightarrow$ 3

$1 \longrightarrow \frac{3}{5}$

$4 \longrightarrow \frac{3}{5} \times 4 = 2.4$

(29) Rakesh yadav sells two types of books viz national books and international books. He sells national books at Rs 18 per book and incurs a loss of 10%. whereas on selling the international books at Rs 30 per book, he gains 20%. In what proportion should the national books and international books be mixed such that he can gain a profit of 25%. by selling the combined books at 27.5 Rs per book.

I II

20 25

22

3 : 2

$10\% = \frac{-1}{10}$ SP → 9 → 18, 1 → 2, CP 10 → 20.

$\frac{1}{5}$ 6 — 30

1 — 5

CP 5 — 25

SP = 27.50 ← ×5.5 — 5

CP = 4 × 5.5 = 22

(30) A milkman has 20 litres of milk. if he mixes 5 litres of water, w/c is freely available in 20 litres of pure milk. if the cost of pure milk is Rs 18 per litre, then the profit of the milkman when he sells all the mixture at cost price, is :

Milk water

18 Rs/L 0 Rs/L

14.4

4 : 1

20 5

18 − 0 = 18

4 : 1

$18 \times \frac{4}{5}$ $18 \times \frac{1}{5}$

$\frac{72}{5}$

14.4

SP → 18)+ 3.6

CP — 14.4)

$\frac{3.6}{14.4} \times 100 = 25\%$ P.

(31) In what ratio should water and soda be mixed that after selling the mixture at the cost price at profit of 33.33%. is made?

water 0 Rs/L — soda 40 Rs/L (let) — 30 Rs/L

~~10~~ : ~~30~~

1 : 3

SP = 40 Rs/L

CP = 30 Rs/L

$+\frac{1}{3}$

4 → 40

1 → 10

OR

$33\frac{1}{3}\% = \frac{1}{3}$ — 1 free, 3 → paid

when mix is sold at its CP.

1:3 Ans

(32) A milkman sells the milk at cost price but he mixes the water in it and thus he gains 9.09%. the quantity of water in the mixture of 1L is :

$9.09\% = 9\frac{1}{11}\% = \frac{1}{11}$ — water, 11 — milk

milk : water

11 : 1

12 litre mixture — 1 L water

1 " " — $\frac{1}{12}$ L water

$= 83.33$ mL.

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(33) A dishonest grocer professes to sell pure milk at CP, but he mixes it with adulterated fat and thereby gains 25%. find the percentage of adulterated fat in the mixture assuming that adulterated fat is freely available.

milk : water

4 : 1

$25\% = \frac{1}{4}$

$\frac{1}{5} \times 100 = 20\%$.

(34) The price of petrol is Rs 60 per litre and the price of oil is Rs 40 per litre. In what ratio the petrol and oil be mixed such that the profit after selling the mixture at Rs 75 per litre be 25%.

60 — 40 — 60

20 : 0

$25\% = \frac{+1}{4}$

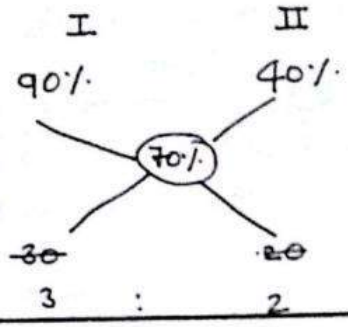
SP = 5 — 75

1 — 15

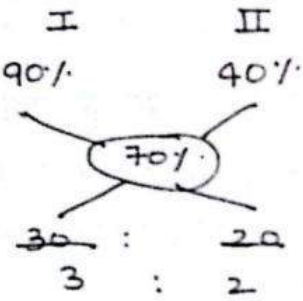
CP = 4 × 15 = 60

such a mix is not possible.

(35) Two vessels contain milk & water. In 1st vessel milk is 90% and in 2nd vessel milk is 40%. In what ratio should he mix both these vessels to obtain a new mixture w|c contain 70% milk.



(36) Two vessel contain milk and water in the ratio 9:1 and 2:3. In what ratio should both vessel is mixed w|c contain milk & water in the ratio 7:3.

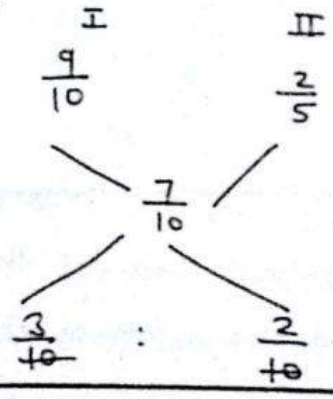


$\frac{9}{10} \times 100 = 90\%$

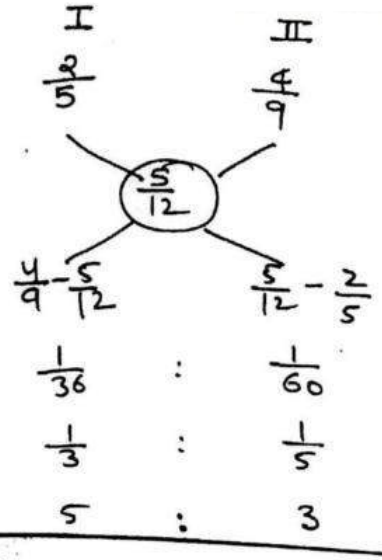
$\frac{2}{5} = 40\%$

$\frac{7}{10} = 70\%$

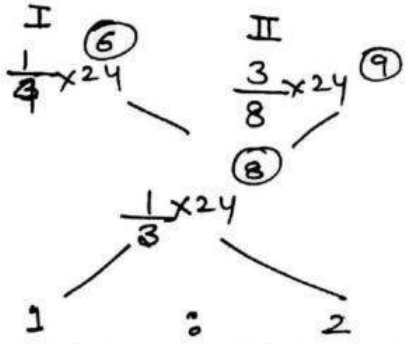
OR



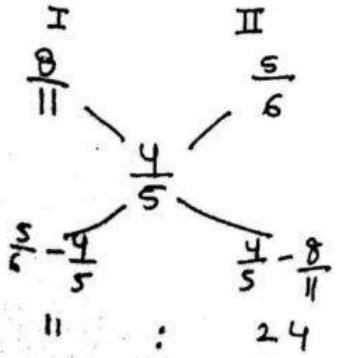
(37) The ratio of water and wine in two diff. containers is 2:3 and 4:5. In what ratio we are required to mix the mixture of two containers in order to get the new mixture in w|c the ratio of wine and water be 7:5.



(38) Two vessels contain spirit and water respectively in the ratio 1:3 and 2:5. find the ratio in w/c they are to be mixed to get a new mixture in w/c the ratio of spirit to water is 1:2



(39) Two vessels contain a mixture of milk and water. In the 1st vessel the ratio of milk to water is 8:3 and in 2nd vessel the ratio is 5:1. A 35 L cask is filled from these vessels so as to contain a mixture of milk and water in the ratio of 4:1. How many litres are taken from the 1st vessel.

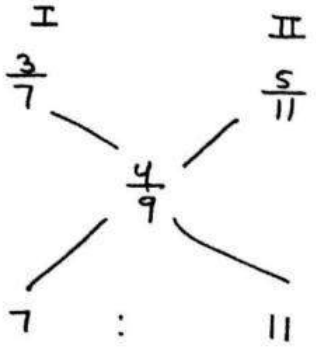


11+24 → 35 ⟶ 35
1 ⟶ 1

11 ltr — I

24 ltr — II

(40) Rakesh yadav purchased two diff kinds of alcohol. In the first mixture the ratio of alcohol to water is 3:4 and in the 2nd mixture it is 5:6. If he mixes the two given mixture and makes a third mixture of 18 litre in w/c the ratio of alcohol to water is 4:5. The quantity of first mixture is required to make the 18 litres of the 3rd kind of the mixture is

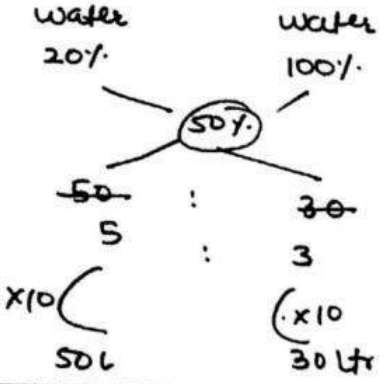


7+11→18→18
1→1
1st → 7 Litre
2nd → 11 litre

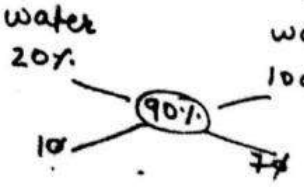
184

CLASS 24

(41) A mixture of water & milk contains 80% milk. In 50L of such a mixture, how many litres of water is required to increase the % of water to 50% ?

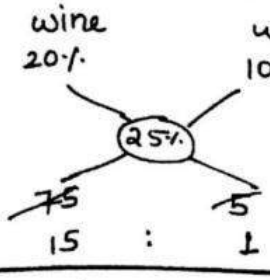


(42) In 85L mix. of milk & water, water is only 20%. How many litres of water is required to ↑ the % of water to 90% ?



1 → 25
7 → 25×7 = 175 Litre.

(43) A mix of 125 gallons of wine & water contains 20% wine. How much wine must be added to mix. in order to ↑ the % of wine to 25% of the new mixture?



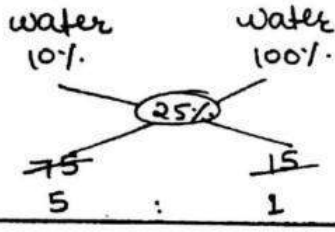
15 → 125

1 → 125/15

8.33 gallons.

---

(44) A mix of 20L of milk & water contains ~~44~~ 10% water. How much water should be added to it to ↑ the % of water to 25%.



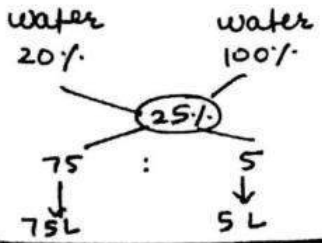
5 → 20

1 → 4

4 L Ans

---

(45) In the 75 litre of mix of soda & water, ratio of soda & water is 4:1. the quantity of water required to make the ratio of soda & water 3:1 is :



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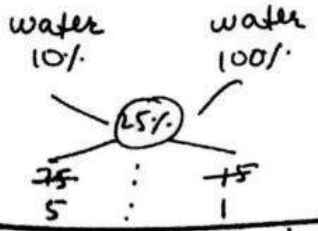
(46) The quantity of mix of milk & water is 70 L. this mix contains 10% water. How many litres of water should be mixed in the mixture to make 25% water in the mixture.

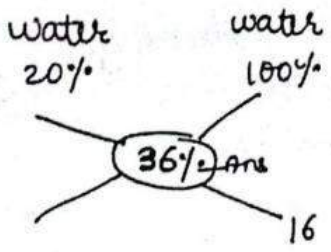


5 → 70

1 → 14 L Ans

---

(47) In 50 L of water & milk mixture, water is 20%. The milk man gives 10 L of this mix. to a customer and then he adds up 10 L of pure water in the remaining mix. the % of water in the final mix is —



4 : 1
40Ltr 10Ltr

100 − 20 = 80

4 : 1

64 16

(48) The diluted alcohol contains 8 L of alcohol and the rest is water. A new mix is w/c concentration of alcohol is 30% is to be formed by replacing diluted alcohol. How many litres of mixture shall be replaced with pure alcohol if there was initially 32 L of water in the mixture.

A W
~~8~~ ~~32~~
1 : 4

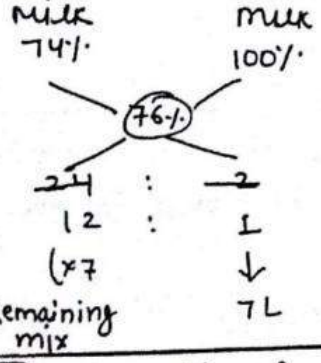
$A = \frac{1}{5} = 20\%$

A A
20% 100%
30%
70 10
7 :
↓
Remaining mix.

7+1 = 8 ⟶ 40
1 ⟶ 5

5 Litre pure alcohol is added.

(49) In a mix of milk & water, there is only 26% water. After replacing the mixture with 7 litres of pure milk, the % of milk in the mix becomes 76%. The quantity of mixture is



12 → 12×7
= 84L

mix = 84+7
= 91 L

(50) The ratio of oil & kerosene in the container is 3:2 when 10L of mixture is taken out and replaced by kerosene, the ratio becomes 2:3. The total quantity of the mixture in the container is :

Kerocene 40% | Kerocene 100%

60%

40 : 20

2 : 1

Remaining mix | 10 Ltr

Total mix = 2+1 = 3

1 → 10

3 → 30 L

(51) A bar tender stole beer from a bottle that contained 50% of spirit and he replaced what he had stolen with beer having 20% spirit. The bottle then contained only 25% spirit How much of the bottle did he steal.

Spirit 50% | Spirit 20%

25%

5 : 25

1 : 5

mix → 1+5 = 6

stole → 5 Ltr.

$\Rightarrow \frac{5}{6} \times 100$

$= 83.33\%$

Remaining | Replaced

(52) A butler stole wine from shop containing 50% spirit, then he replenished it by diff wine containing 20% spirit. Thus there was only 30% spirit in the new mixture. How much of the original wine did he steal?

spirit 50% | spirit 20%

30%

10 : 20

1 : 2

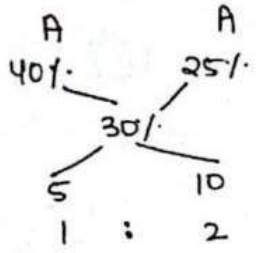
↓ Remaining | ↓ Replaced

mix = 1+2 = 3

Replaced = stolen

stolen = $\frac{2}{3}$

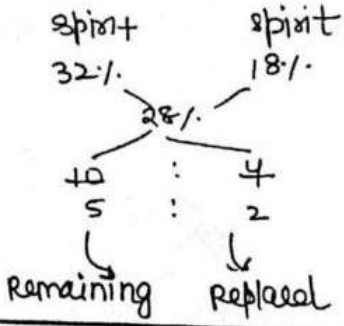
(53) In wine 40% alcohol & rest is water. Some quantity of wine taken out is replaced with same quantity of another wine containing 25% alcohol. Now the bottle contains 30% alcohol. find what part of wine was taken out from bottle?



mix = 1+2 = 3

Replaced = $\frac{2}{3}$

(54) In a wine 32% spirit, some quantity taken out and replaced with another type that contains 18% spirit. Now the spirit in the bottle is 28%. find what part of the wine is taken out?



Taken out = $\frac{2}{7}$ Ans

(55) A vessel is full of 80 L milk, 8 L taken out & replaced by water. Again 8 L taken out and replaced by water. find the amount of milk in the final mixture so formed.

> final quantity = Initial quantity $\left(1-\frac{x}{c}\right)^n$
>
> c → capacity of vessel
> x → quantity taken out at a time
> n → no. of process.

final quantity = $80\left(1-\frac{8}{80}\right)^2$

$= 80 \times \frac{9}{10} \times \frac{9}{10}$

$= 64.8$ L

(56) A gas cylinder contains mix of oxygen & nitrogen. m w/r oxygen is 36% of the mixture. some litres of the mix is taken out and replaced by nitrogen and this process is repeated one more time. At the end oxygen remained 9% of the mixture, find the quantity of mixture taken out at a time.

$$\frac{9}{100} = \frac{36}{100}\left(1-\frac{x}{25}\right)^2$$

square both sides

$$1 = 2\left(1-\frac{x}{25}\right)$$

$$x = 12.5 \text{ litre}.$$

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(57) From the 50L of pure milk, 5L of milk is taken out and 5 L water is added. this processes is repeated 3 times, the amount of milk left after the 3rd replacement

$$\text{Final Q} = 50\left(1-\frac{5}{50}\right)^3$$

$$= 50 \times \frac{9}{10} \times \frac{9}{10} \times \frac{9}{10} = \frac{9\times9\times9}{20} = 36.45 \text{ ltr}$$

(58) From a 200L tank of petrol, the seller replaces each time with kerocene when he sells 40 litres of petrol (or its mixture). Every time he sells out only 40L of petrol (pure or impure). After replacing the petrol with kerocene 4th time the total amount of kerocene in the mix is →

$$\text{final Q. of petrol} = 200\left(1-\frac{40}{200}\right)^4$$

$$= 200 \times \frac{4}{5} \times \frac{4}{5} \times \frac{4}{5} \times \frac{4}{5} = 81.92 \text{ L}$$

$$\text{Kerocene} = 200 - 81.92$$

$$118.08 \text{ L}$$

(59) A jar is full of milk. A person draw out 20% of the milk from the jar and replaced it with sugar solution. He has repeated the same process 4 times and thus there was only 512 gm of milk left in the jar, the rest part of the jar was filled with sugar soln. The initial amt. of the milk in the jar was :

$$512 = \text{Initial}\left(1-\frac{1}{5}\right)^4$$

$$512^2 = \text{Initial} \times \frac{256}{625}$$

initial milk = $625 \times 2 = 1250$ gm.

---

(60) A vessel is full of milk, $\frac{63}{15}$ L. if 9L of milk is taken out and replaced by same amt. of water and further 7 L mixture is taken out and replaced by same amt. of water then find at the end of 2nd process the amount of water in the mixture?

$$63\left(1-\frac{9}{63}\right)\left(1-\frac{7}{63}\right)$$

$$63 \times \frac{6}{7} \times \frac{8}{9}$$

final Q. of milk = 48 L

water = $63 - 48 = 15$ L

---

(61) A vessel is full of milk, 15 L of milk is taken out & replaced by water. this process is repeated once more. find the initial amt. of milk in the vessel if at the end the ratio of milk & water becomes 16:9.

$$16 = 25\left(1-\frac{15}{C}\right)^2$$

square root

$$4 = 5\left(1-\frac{15}{C}\right)$$

$C = 75$ ltr

OR

Starting milk	end milk
25	16

process is 2 times, so

$\sqrt{25} : \sqrt{16}$

5 → milk, 4 → I ⟶ 15

$15 \times 5 = 75$ l

end m : w
16 : 9

mix → 25 means starting ₹ of 25 ₹ milk.

(62) From a container of beer, a thief has stolen 15 litres of beer and replaced it with same quantity of water. He again repeated the same process. Thus in three attempts the ratio of beer and water became 343 : 169. The initial amount of beer in the container was :

Beer : water

343 : 169

343 + 169 = (512) Beer in starting

Starting Beer : End Beer

512 : 343

3 process, so cube root

$\sqrt[3]{512}$: $\sqrt[3]{343}$

8 : 7

Beer of starting में सारी

1 ⟶ 15 L

8 ⟶ 15 × 8 = 120 L

---

(63) Some amount out of Rs 6000 was lent out at 10% per annum and the rest amount at 20% per annum and thus in 4 years the total interest from both the amounts collected was Rs 3400. What is the amount w/c was lent out (a) 10% per annum ?

10% 20%

$14\frac{1}{6}\%$

$5\frac{5}{6}$ $4\frac{1}{6}$

35 : 25

7 : 5

$\frac{6000 \times r \times 4}{100} = 3400$

$r = 14\frac{1}{6}\%$

12 ⟶ 6000

1 ⟶ 500

7 ⟶ 3500 Rs Ans

---

(64) Two vessel contain a mixture of milk & water in ratio 1:2 and 2:3. if both vessel are mixed in ratio 1:1 then find the ratio of milk & water in new mixture.

1 ltr: m : w = 1 : 2 ; 1 ltr: m : w = 2 : 3

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

$m = \frac{1}{3} + \frac{2}{5} = \frac{11}{15}$

$w = \frac{2}{3} + \frac{3}{5} = \frac{19}{15}$

m : w = 11 : 19