

Date: \_\_\_\_\_

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## Question 2:

a

Solution. 0

Total mixture of milk and water = 60 litres.

Ratio of milk to water = 2:1

The sum of ratio is = 2+1

= 3

The quantity of water is =  $\frac{1}{3} \times 60$

= 20 liter

The quantity of milk is =  $\frac{2}{3} \times 60$

= 40 liter.

Now let  $x$  amount of water

is added, then the new ratio

become 1:2

So,

$$\frac{40}{20+x} = \frac{1}{2}$$

$$80 = 20+x$$



$$x = 80 - 20$$

$$x = 60 \text{ liter}$$

So, 60 liter of water should  
be added to get the ratio  
1:2

**B**

Let the present age of father =  $x$   
and the present age of son =  $y$

Now according to the question

$$(x-10) = 3(y-10)$$

~~and~~ 
$$x-10 = 3y-30$$

~~and  $(x+10) = 2(x+10)$~~

$$x = 3y - 30 + 10$$

$$x = 3y - 20 \quad \text{--- (1)}$$

and

$$(x+10) = 2(y+10)$$

$$x+10 = 2y+20$$

$$x = 2y + 10 \quad \text{--- (2)}$$



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Subtract 2 from (1)

$$x = 3y - 20$$

$$-x = 2y + 10$$

$$0 = y - 30$$

$$\boxed{y = 30}$$

Put in (1)  $y = 30$

$$x = 2(30) + 10$$

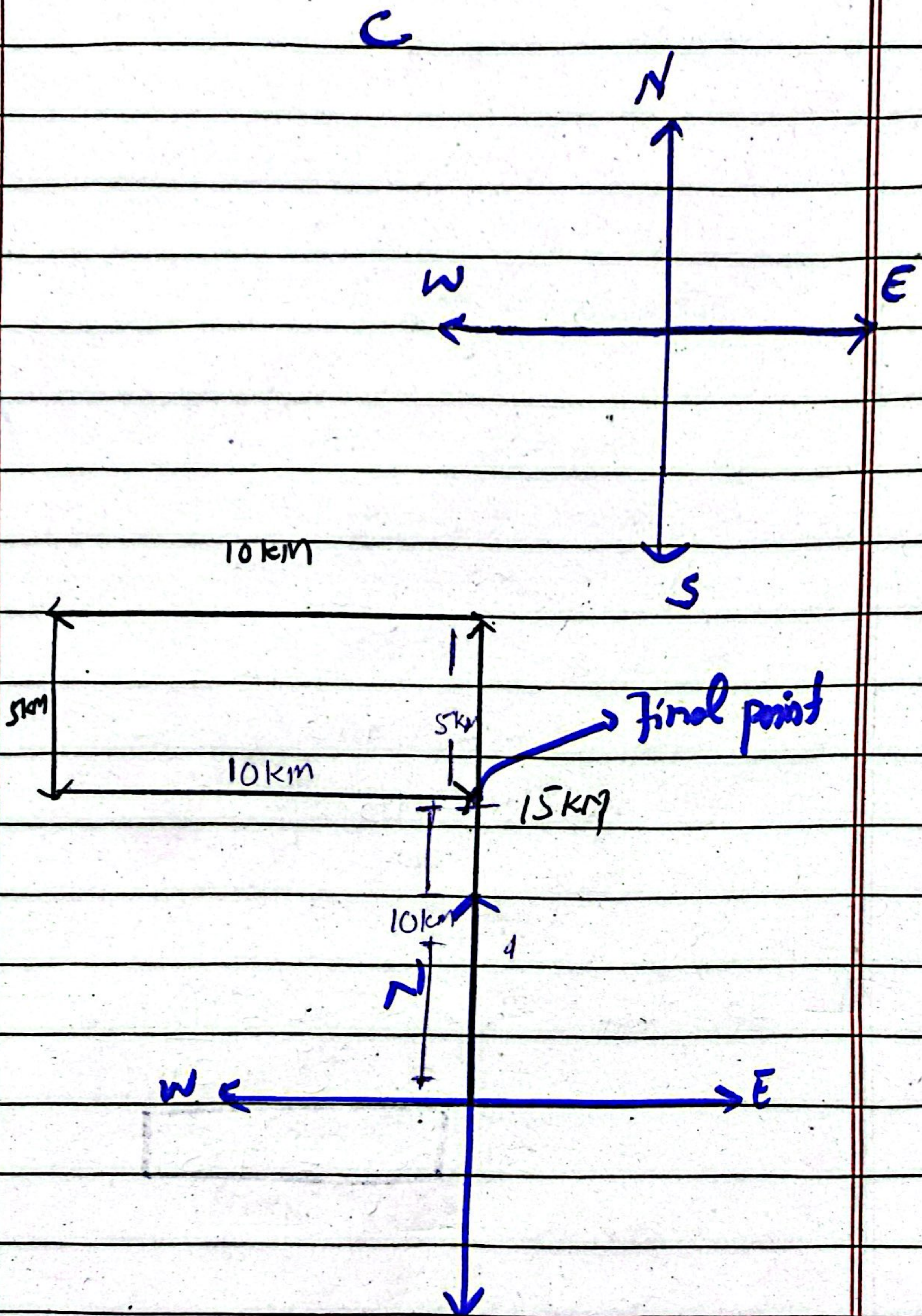
$$x = 60 + 10$$

$$x = 70$$

So their ratio is  $\frac{x}{y} = \frac{70}{30}$

$$\text{So } \boxed{x:y = 7:3}$$





① He is in north direction

② He is 10 km from the house

③ He had travelled

$$15 \text{ km} + 10 \text{ km} + 5 \text{ km} + 10 \text{ km} = 40 \text{ km}$$



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d

Solution:

Let the speed of two trains be  $7x$  and  $8x$  km/hr

The speed of good train is 100 km/hr

$$8x = 100$$

Now the speed of 2nd train

$$8x = 100$$

$$x = 12.5$$

The speed of first train is

$$\text{Speed of train} = 7x = 7(12.5)$$

$$\text{speed of first train} = 87.5 \text{ km/hr}$$



Q 3

A

Solution.

$$\text{ratio of profit} = 5:7:8$$

Let Key <sup>part included</sup> share  $x_1$  amount for 14 month, and person  $x_2$  amount for 8 month and 3rd person  $x_3$  for 7 month

$$\text{So, } 14x_1 : 8x_2 : 7x_3$$

As ratio of investment is equal to ratio of profit.

$$14x_1 : 8x_2 : 7x_3 = 5 : 7 : 8 \quad \text{--- (A)}$$

Compare term (1) & (2)

$$\frac{14x_1}{8x_2} = \frac{5}{7}$$

$$\frac{7x_1}{4x_2} = \frac{5}{7}$$

$$\boxed{x_2 = \frac{49x_1}{20}} \quad \text{--- (1)}$$



New compare ratio of ① & ②  
term in eq (A)

$$\frac{214x_1}{7x_3} = \frac{5}{8}$$

$$\frac{2x_1}{x_3} = \frac{5}{8}$$

$$\frac{16x_1}{5} = x_3$$

or  $x_3 = \frac{16x_1}{5}$  ——— ②

as their investment was

$$x_1 : x_2 : x_3 = x_1 : 49x_1 : \frac{16x_1}{5}$$

$$= 1 : 49 : \frac{16}{5}$$

$$= 20 \times 1 : 49 : \frac{20 \times 16}{5}$$

$$= 20 : 49 : 16 \times 4$$

$$x_1 : x_2 : x_3 = 20 : 49 : 24$$



**B**Solution:Let the <sup>odd</sup> number is  $x$ The other <sup>odd</sup> numbers are  $x+2, x+4$ .

as their average is given as 91

$$x + x + 2 + x + 4 = 91$$

$$3x$$

$$3x + 6 = 91 \times 3$$

$$3x + 6 = 273$$

$$3x = 273 - 6$$

$$3x = 267$$

$$x = \frac{267}{3}$$

$$3$$

$$x = 89$$

The next is

$$x + 2 = 89 + 2 = 91$$

$$x + 4 = 89 + 4 = 93$$



C

Sol:

~~from the ques~~Let the number is  $x$ The other number is  $y$ 

So according to the question:

$$40\% x = \frac{2}{3} y$$

$$\frac{40}{100} x = \frac{2}{3} y$$

$$\frac{x}{y} = \frac{200}{120}$$

$$\frac{x}{y} = \frac{20}{12}$$

$$\frac{x}{y} = \frac{5}{3}$$

$$\text{So } x:y = 5:3$$