

Question NO 2

Part (A)

In a mixture 60 litres, the ratio of milk and water 2:1

$\Rightarrow 2+1=3$

and Water = $\frac{1}{3}(60) = 20$ litres

milk = $\frac{2}{3}(60) = 40$ litres

Now, If the ratio is to be 1:2,

Then Water = 40 litres

and Milk = 20 litres

Therefore 20 litres more was further added.

Part (B)

let the age of son = x years

let the age of father = y years.

The age of father 10 years ago was twice the age of his son

$y-10 = 2(x-10)$ — (i)

Ten years hence, father's age will be twice that of his son

$y+10 = 2(x+10)$ — (ii)

Solving eq (i) & (ii)

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

$$2y = 5x \quad y + 10 = 2x + 20$$

$$0 = x - 10$$

$$\Rightarrow x = 10$$

put in eq (iii)

$$2x = y - 10$$

$$2(10) = y - 10$$

$$20 + 10 = y$$

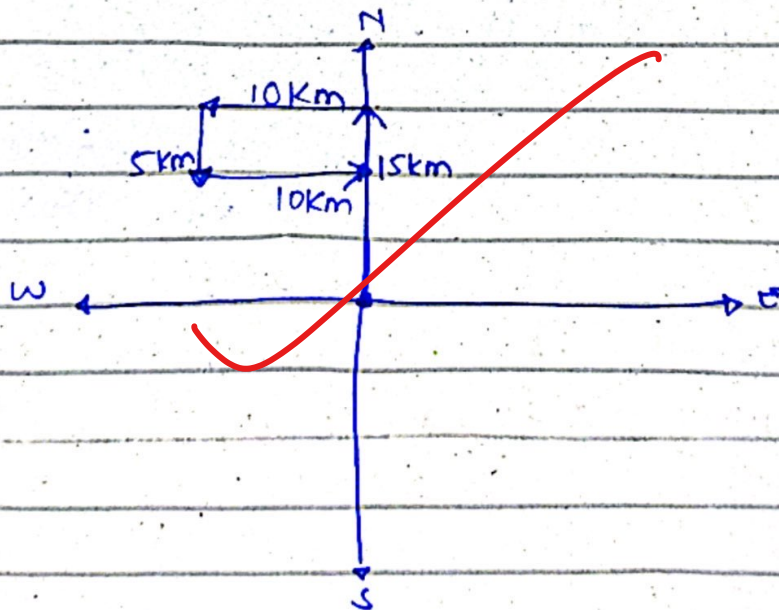
$$\Rightarrow y = 30$$

Therefore

$$\frac{y}{x} = \frac{30}{10} = \frac{3}{1}$$

$$y : x = 3 : 1$$

Part C



1) In which direction is he from his house?

Ans: ~~North~~ East

2) How far is he from his house?

Ans: 10km

3) How much distance he had travelled?

Ans: 40 km

Part (D)

Ratio between the speeds of two trains is $7:8$.

$$\frac{v_1}{v_2} = \frac{7}{8} \quad \text{--- (i)}$$

Second train runs 400 km in 4 hours

$$v_2 = \frac{400}{4} = 100 \text{ km/hr.}$$

From eq (i) $\Rightarrow v_1 = \frac{7}{8} v_2$

$$v_1 = \frac{7}{8} (100) = 87.5$$

$$v_1 = 87.5$$

Speed of first train is 87.5 km/hr

$$\begin{array}{r} 87 \\ 175 \\ 16 \\ \hline 16 \end{array}$$