

Alina Ayoub - 063
Question No: 01

32

(A)

(1) 2, 3, 6, 4, 5, 20, 6, 3, 18

(2) 1, 3, 9, 15, 25, 35, 49

(3) 2, 7, 10, 22, 18, 36, 26, 50 X

(4) 34, 7, 37, 14, 40, 28, 43, 56

(5) 5, 7, 11, 13, 17, 19

4

(B)

Two number's ratio = 2:3

let $2x$, $3x$

$$(2x) \times (3x) = 294$$

$$6x^2 = 294$$

$$x^2 = \frac{294}{6}$$

$$x^2 = 49$$

$$x = 7$$

$$2(x) = 2(7) = 14$$

$$3(x) = 3(7) = 21$$

Numbers are 14 and 21

5

(C)

No of bricks = ?

Volume of brick = $25\text{cm} \times 11.25\text{cm} \times 6\text{cm}$

Volume of wall = $600\text{cm} \times 600\text{cm} \times 22.5\text{cm}$

No of brick = $\frac{\text{Volume of wall}}{\text{Volume of bricks}}$

$$\text{No. of bricks} = \frac{10800000}{1687.5} = 6400$$

(D)

Two numbers are x and $2x$.

$$\text{Sum of two numbers} = x + 2x$$

$$x + 2x = 96$$

$$3x = 96$$

$$x = 32$$

$$2x = 2(32) = 64$$

Hence the greater of two numbers is twice the less in 32, 64.

Question No: 02

(A)

Mixture = 60 litres

Milk : water

2 : 1

$$\text{Previous ratio of water} = \frac{1}{2} \times 60 = 30 \text{ litres}$$

New ratio milk to water = 1:2

$$\text{New added water} = \frac{2}{3} \times 60 = 40 \text{ litres}$$

$$\text{Water quantity} = \text{New ratio} - \text{old ratio}$$

$$= 40 - 20$$

$$= 20$$

20 litres of water are to be further added.

(B)

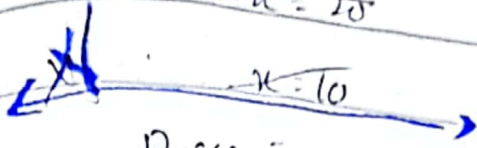
	Past	Present	Future
Father	$3(x-10)$	$3x-10$	$3x+10$
Son	$(x-10)$	$x-10$	$x+10$

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

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

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

$$2x = 20$$



	Present	Past	Future
Father	$3x+10$	$3x$	$3x+10+10$
Son	$x+10$	x	$x+10+10$

According to condition

$$3x+20 = 2(x+20)$$

$$3x+20 = 2x+40$$

$$3x-2x = 40-20 \Rightarrow x = 20$$

$$3(20) + 10 : 20 : 10$$

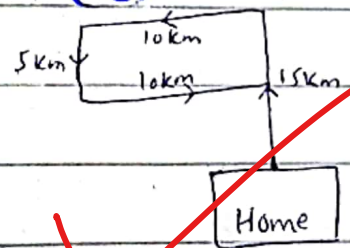
$$60 + 10 : 30$$

$$70 : 30$$

$$7 : 3$$

5

(C)



1. In which direction is he from his house?

North

2. How far is he from his house?

10 km

3. How much distance he had travelled?

30 km

(D)

Ratio between trains = 7:8

$$\begin{aligned} \text{2nd train speed} &= \frac{100 \text{ km}}{1 \text{ hours}} \\ &= 100 \text{ kmh}^{-1} \end{aligned}$$

1st train speed = ?

$$7:8 = x:100$$

$$7 \times 100 = 8 \times x$$

$$700 = 8x$$

$$\frac{700}{8} = x$$

$$87.5 = x$$

Speed of 1st train = 87.5 kmh⁻¹

Question No: 03

(A)

Three Partner's ratio = 5:7:8

Ratio of investment is = 14x : 8y : 7z

$$14x : 8y : 7z = 5 : 7 : 8$$

$$\frac{14x}{8y} = \frac{5}{7} \quad \text{and} \quad \frac{14x}{7z} = \frac{5}{8}$$

Extra
at temp
does not
count

$$\frac{14x}{18y} = \frac{5}{7} \Rightarrow \frac{14x \times 7}{18 \times 5} = y$$
$$\frac{49}{20} x = y$$

$$\frac{14x}{7z} = \frac{5}{8} \Rightarrow \frac{14x \times 8}{7 \times 5} = z$$
$$z = \frac{112}{35} x$$

$$x : y : z = x : \frac{49}{20} x : \frac{112}{35} x$$

multiply by $\frac{20}{x}$

$$\frac{20}{x} \times x : \frac{49}{20} x \times \frac{20}{x} : \frac{20}{x} \times \frac{112}{35} x$$
$$20 : 49 : 64$$

The ratio of their investments is $20 : 49 : 64$ respectively.

(B)

Average of 3 consecutive numbers is 91

Let three consecutive numbers are

$$x+1, x+3, x+5$$

$$\frac{x+1 + x+3 + x+5}{3} = 91$$

$$3x+9 = 91 \times 3$$

$$3x+9 = 273$$

$$3x = 273 - 9$$

$$x = \frac{264}{3}$$

$$x = 88$$

$$x+1 = 88+1 = 89$$

$$x+3 = 88+3 = 91$$

$$x+5 = 88+5 = 93$$

Three consecutive numbers are 89, 91, 93.

(C)

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

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

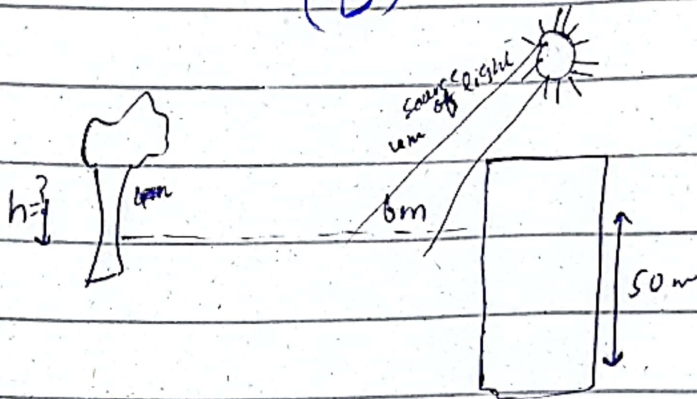
$$\frac{2}{5} x = \frac{2}{3} y$$

$$x = \frac{2 \times 5}{3 \times 2} y$$

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

$$x : y = 5 : 3$$

(D)



$$\frac{\text{height of tree}}{\text{Distance from light to tree base}} = \frac{\text{height of building}}{\text{Distance from light to building base}}$$

$$\frac{h}{4} = \frac{50}{4+6}$$

$$h = \frac{50 \times 4}{10}$$

$$h = 5 \times 4$$

$$h = 20 \text{ m}$$