

G.S.A

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Test-3Q.No. 1(2)

Let the two numbers be  $3x$  and  $5x$

When  $9$  is subtracted from each,

$$(3x - 9) / (5x - 9) = 12/23$$

~~cross~~

$$\frac{3x - 9}{5x - 9} = \frac{12}{23}$$

Cross multiplying

$$(3x - 9)(23) = (5x - 9)(12)$$

$$69x - 207 = 60x - 108$$

$$69x - 60x = 207 - 108$$

$$9x = 99$$

$$x = 11$$

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

Day: \_\_\_\_\_

Smaller number  $\Rightarrow 32x = 3(11)$

$\checkmark = 33$

QNo. 1 (b)

Let their investment be  $5x, 7x$  and  $8x$   $\checkmark$

The share of profit is proportional to investment  $\times$  time

for the three partners

Ratio of profits -  $5x \times 14 : 7x \times 8 : 8x \times 7$   
 $= 70x : 56x : 56x$

Simply :

$35 : 28 : 28$   $\times$

The ratio of their investment is  $35 : 28 : 28$

QNo. 1 (c)

Sum of weights of A, B, C =  $45 \times 3 = 135$  — (1)

Sum of weights of A and B =  $40 \times 2 = 80$  — (2)

Sum of weights of B and C =  $43 \times 2 = 86$  — (3)

Adding these equations

$$(A+B+C) + (A+B+C) = 135 + 80 + 86 = 301$$

$$3B + 2A + 2C = 301 \Rightarrow 3B + 2(A+C) = 301$$

$$A+B+C = 135$$

$$3B + 2(\quad) = 301$$

Subtracting  $A+B+C$

$$B = 301 - 2(135) = 31 \text{ kg}$$

How??

Q No. 1 (d)

Let the number be  $x$

$$x + 17 = \frac{60}{x}$$

Multiply through by  $x$

$$x^2 + 17x = 60$$

$$x^2 + 17x - 60 = 0$$

$$(x+20)(x-3) = 0$$

$x = -20$  is not valid because

it must be positive.

So,

$x = 3$  is the number.

Q No. 2 (d)

Let the cost price of the article be  
 $x$

Profit when sold for Rs. 1920

$$\text{Profit Percentage} = \left( \frac{1920 - x}{x} \right) \times 100 \quad \checkmark$$

Loss when sold for Rs. 1280

$$\text{Loss Percentage} = \left( \frac{x - 1280}{x} \right) \times 100 \quad \checkmark$$

Given that profit Percentage = Loss Percentage

$$\frac{1920 - x}{x} = \frac{x - 1280}{x}$$

$$1920 - x = x - 1280$$

$$2x = 3200$$

$$x = 1600$$

Now, to make a 25% profit

$$\text{Selling Price} = \text{cost price} \times \left( 1 + \frac{25}{100} \right) \quad \text{⑤}$$

$$= 1600 \times 1.25 = 2000$$

The Article sold for Rs. 2000

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

Day: \_\_\_\_\_

Qno. 2 (b)

Work done by A in 1 day =  $\frac{1}{15}$  ✓

Work done by B in 1 day =  $\frac{1}{20}$  ✓

Work together in 1 day

$$= \frac{1}{15} + \frac{1}{20}$$

$$= \frac{4}{60} + \frac{3}{60}$$

$$= \frac{7}{60}$$

Work done by A and B in 4 days

$$\frac{7}{60} \times 4 = \frac{28}{60} = \frac{7}{15}$$
 ✓

Work left:

$$1 - \frac{7}{15} = \frac{15}{15} - \frac{7}{15} = \frac{8}{15}$$

The fraction of work left is

$$\frac{8}{15}$$

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

Day: \_\_\_\_\_

Q No. 2 (c)

Let the person's age be  $x$  and the mother's age be  $y$ .

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

$$x + 8 = \frac{1}{2}(y + 8)$$

Substitute  $x = \frac{2}{5}y$  into the second equation:

$$\frac{2}{5}y + 8 = \frac{1}{2}(y + 8)$$

Multiply through by 10

$$4y + 80 = 5(y + 8)$$

$$4y + 80 = 5y + 40$$

$$y = 40$$

The mother's present age is 40 years.

Q No. 2 (d)

Let the number be  $x$

Correct result :

$$x \times \frac{5}{3} = \frac{5x}{3} \quad \checkmark$$

Incorrect result:

$$x \times \frac{3}{5} = \frac{3x}{5} \quad \checkmark$$

Error:

$$\text{Error} = \left( \frac{\frac{5x}{3} - \frac{3x}{5}}{\frac{5x}{3}} \right) \times 100 \quad \checkmark$$

Simply

$$\text{Error} = \left( \frac{\frac{25x - 9x}{15}}{\frac{5x}{3}} \right) \times 100$$

$$= \left( \frac{\frac{16x}{15}}{\frac{5x}{3}} \right) \times 100$$

$$\left( \frac{16}{15} \times \frac{3}{5} \right) \times 100 = \frac{48}{5} = 9.6\%$$

The percentage error is 96% ~~9.6%~~

$$\Rightarrow \left( \frac{16x}{15} \right) \left( \frac{3}{5x} \right) = 64\% \quad \text{Ans}$$