

Maths
General Science and Ability
Test #04

QUESTION NO: 1

MISSING TERMS

1, $2, 3, 6, 4, 5, = 20, \underline{18}, 3, 18$
 $+1 \quad +2 \quad -2 \quad +1 \quad \quad \quad -15 \quad \quad \quad \times 6$

2, $1, 3, 9, 15, 25, \underline{31}, 49$
 $(1)^2 \quad (3)^2 \quad (5)^2 \quad (7)^2$
 $2 \quad 6 \quad 8 \quad 10$

3, $2, 7, 10, 22, 18, 37, 26, \underline{52}$
 $\times 3 + 5 \quad \times 1 + 3$

$\frac{15}{2} = 7.5$

$\frac{137}{15} = 9.13$

4, $34, 7, 37, 14, 40, 28, 43, \underline{56}$

5, $5, 7, 11, \underline{13}, 17, 19$
 $+2 \quad +4 \quad +2 \quad +4 \quad +2$

QUESTION NO: 02.

Data

2 numbers are in $2:3$

Product of LCM & HCF = 294

Required

Numbers = ?

Solution

Let, the two numbers be x and y .

So,

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

$$6x^2 = 294$$

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

$$x^2 = 49$$

$$\boxed{x = 7}$$

$$\text{1st no:} = 2x (2 \times 7) = 14$$

$$\text{2nd no:} = 3x (3 \times 7) = 21$$

QUESTION NO: C

Data:

$$\text{Brick} = 25 \text{ cm} \times 11.25 \text{ cm} \times 6 \text{ cm}$$

$$\text{Wall} = 8 \text{ m} \times 6 \text{ m} \times 22.5 \text{ cm}$$

Required:

$$\text{Bricks} = ?$$

Solution:- Volume of cuboid = $l \times h \times b$

find volume of bricks = V_B

$$V_B = 25 \times 11.25 \times 6$$

$$V_B = 1687.5$$

find volume of wall = V_W

$$V_W = 8 \times 6 \times 22.5$$

Now,

$$\text{No. of bricks} = \frac{\text{Vol. of wall}}{\text{vol of one brick.}}$$

$$\text{no. of bricks} = \frac{8 \times 6 \times 22.5}{25 \times 11.25 \times 6}$$

$$\text{no. of bricks} = 6400$$

QUESTION NO: 4 (D)

Data

greater of 2 num: = 2 the less
Sum of number = 96

Required

Numbers.

Solution

let, greater no: = x

Smaller no: = y

$$\text{As, } y = 2x \quad \text{--- (i)}$$

$$x + y = 96 \quad \text{--- (ii)}$$

put value of y in eq (ii)

$$x + 2x = 96$$

$$3x = 96$$

$$x = \frac{96}{3} = 32$$

$$x = 32$$

Now, Put value of x in eq: (i)

$$y = 2(32)$$

$$= 64$$

So,

$$x = \text{greater number} = 32$$

$$y = \text{small number} = 64$$

Question 02. (A)

Data:-

$$\text{mixture} = 60 \text{ lit}$$

$$\text{Ratio} = 2 : 1$$

Required. to have 1:2 - Qty of water = ?

Solution: Initial mixture 2:1

$$\text{Milk} = 60 \times \frac{2}{3}$$

$$= 40 \text{ litres}$$

$$\text{Water} = 60 - 40 = 20$$

To gain 1:2 mixture.

$$\text{Milk} = 60 \times \frac{1}{3} =$$

Suppose water to be added = x (further added water)

Milk : water

$$40 : 20 + x = 1 : 2$$

or

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

$$x = 60 + 20$$

$$= 80 \text{ liter}$$

By cross multiplication

$$40 \times 2 = 20 + x$$

$$80 = 20 + x$$

$$x = \frac{80}{1} - 20$$

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

(11)

Question 02 (B)

Data::

Age of Father 10 years ago = $3 \left(\begin{smallmatrix} \text{age} \\ \text{of} \\ \text{son} \end{smallmatrix} \right)$

Age of father after 10 year = $2 \left(\text{son's age} \right)$

Req:: Ratio of present ages = ??

Solution let, age of son 10 years ago = x
then age of father 10 year ago = $3x$ years

Son's age now = $(x+10)$ years.

Father's age now = $(3x+10)$

Ten year hence,

Father's age = $(3x+10)+10$

Age of son = $(x+10)+10$

According to condition,

Father's age is twice of the son.

$$(3x+10)+10 = 2[(x+10)+10]$$

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

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

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

$$x = 20$$

Therefore,

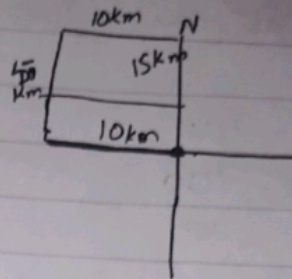
son's present age = $x+10 = 20+10 = 30$

and father present age = $3x+10 = 70$

Ratio = $30 : 70$

Question 02 (c)

Dalā



a) Direction = North

b) He is 10 km far from his house.

c) Total distance covered = 40 km.

Question 02 (D)

Dalā:

Ratio b/w speed of two train = 7:8

If second train runs 400 km in 4h

Required Speed of 1st train = ??

Solution $S_1 : S_2$
 $7 : 8$

Let common multiple by x .

$7x : 8x$

Train 2.

$D = 400 \text{ km}$

$T = 4 \text{ hours.}$

$$V = \frac{400}{4} = 100 \frac{\text{km}}{\text{h}}$$

$$S_2 = 100 \text{ km/h}$$

Equate the speed of train 2.

$$8x = 100$$

$$x = \frac{100}{8}$$

Speed of 1st train = $S_1 = 7x$.

$$S_1 = 7 \times \frac{100}{8}$$

$$S_1 = \frac{175}{2} \text{ km/hr}$$

$$= 87.5 \text{ km/h}$$