

Find LCM.

1. 15 and 12

3, 5, 15, 30, 45

2, 3, 4, 6, 12, 24

3 is LCM

$$\begin{array}{r|l} 5 & 15 \\ \hline 3 & 3 \\ \hline & 1 \end{array}$$

$$\begin{array}{r|l} 2 & 12 \\ \hline 2 & 6 \\ \hline 3 & 3 \\ \hline & 1 \end{array}$$

$$5 \times 3$$

$$15$$

$$2 \times 2 \times 3$$

$$5 \times 3, 2 \times 2 \times 3$$

1) 14 and 28

2, 7, 14, 28, 42

2, 4, 7, 28, 56

2 is LCM

$$\begin{array}{r|l} 2 & 14 \\ \hline 7 & 7 \\ \hline & 1 \end{array}$$

$$\begin{array}{r|l} 2 & 28 \\ \hline 2 & 14 \\ \hline 7 & 7 \\ \hline & 1 \end{array}$$

$$2 \times 7$$

$$2 \times 2 \times 7$$

④ 10, 12 and 8

2, 5, 10, 20, 30, 40  
2, 3, 4, 6, 12, 24, 36  
2, 4, 8, 16, 24, 32

LCM is 2

⑤ 14, 21 and 35

2, 7, 14, 28, 42

3, 7, 21, 42, 63

5, 7, 35, 70

LCM is 7.

⑥ 30, 50 and 60

2, 3, 5, 6, 10, 15

2, 5, 10, 25, 50

2, 3, 4, 5, 6, 10

~~LCM~~ 2, 5, 10

LCM is 2

7) 24 and 20

$$\begin{array}{r|l} 2 & 24 \\ \hline 2 & 12 \\ \hline 2 & 6 \\ \hline 3 & 3 \\ \hline & 1 \end{array}$$

$$\begin{array}{r|l} 2 & 20 \\ \hline 2 & 10 \\ \hline 5 & 5 \\ \hline & 1 \end{array}$$

So expressing 24 Product of Prime factor is  $2 \times 2 \times 2 \times 3 = 24$

$$24 = 2^3 \times 3^1$$

So expressing 20

$$2 \times 2 \times 5 = 20$$

$$20 = 2^2 \times 5^1$$

So just have to Find LCM

$$24 = \cancel{2^3}^3 \cancel{3^1}^1 5^0$$

$$20 = \cancel{2^2}^2 \cancel{5^1}^1 3^0$$

we have to take highest power <sup>Num</sup>

$$2^3 \times 3^1 \times 5^1$$

$$8 \times 3 \times 5 = 120$$

$$\begin{array}{r} 24 \\ 25 \\ \hline 0 \end{array}$$

# Main

# Percentage::

Q1:-

when 40% of a number is added to 42 the result is the number itself.

Find the No (70)

Let the number be  $x$

$$\frac{40}{100} \cdot (x) + 42 = 42$$

$$\frac{46x}{10} = \cancel{42} + 42$$

$$46x = 42 \times 10$$

$$46x = 4200$$

$$x = \frac{4200}{46}$$

$$\begin{array}{r} 91 \\ 46 \\ \hline 23 \end{array}$$

$$\text{Num} = x = \boxed{91.3}$$

### Example 03:-

15 litre of mixture contains 20-percent alcohol and rest is water if 3 liters of water be mixed in it what is the Percentage of alcohol in new mix?

Solution +

$$\begin{aligned} \text{Total mix} &= 15 \text{ liter} \\ \text{Alcohol} &= \frac{20}{100} (15) \end{aligned}$$

$$\text{alcohol} = 3 \text{ litre}$$

Rest is water = 12 litre

if 3 litre of water be mixed in it now water is

$$12 + 3 = 15 \text{ ltrs}$$

% of alcohol in new mixture

$$= \frac{\text{alcohol}}{\text{Total}} \times 100$$

$$= \frac{3}{15} \times 100$$

$$= \frac{100 \times 3}{15} = \frac{50}{3}$$

$$= 16.6\%$$

Q5: 1 kg of tea and 4 kg of  
sugar cost Rs 35 but if sugar  
rises by 50% and tea 10%.  
they would cost Rs 42.50  
Find the price per kg of sugar.

Solution :-

Let price of 1 kg tea is  $x$   
Price of 4 kg sugar =  $4y$

Price of 1 kg <sup>tea</sup> + 4 kg sugar  
 $x + 4y = 35 \rightarrow \textcircled{1}$

Now tea increased by 10%

$$x + \frac{10\%}{100} x = \frac{10x + x}{10}$$

$$= \frac{10x + x}{10}$$

$$= \frac{11x}{10}$$

Sugar  $\uparrow$  by 50%

$$y + \frac{50\%}{100} y =$$

$$= \frac{y + y}{2} = \frac{2y + y}{2}$$

$$= \frac{34}{2}$$

Now Price after increase.

$$\frac{11x}{10} + 4\left(\frac{34}{2}\right) = 42.50$$

$$\frac{11x}{10} + 64 = 42.50$$

multiply by 10

$$10 \times \frac{11x}{10} + 64 \times 10 = 42.50 \times 10$$

$$11x + 640 = 425 \rightarrow (2)$$

Making coefficient square from eq (1)

$$x + 4y = 35$$

multiply by 11

$$11x + 44y = 385 \rightarrow (3)$$

Subtract by eq (3) from eq (2)

$$\begin{array}{r} 11x + 60y = 425 \\ - 11x + 44y = 385 \\ \hline \end{array}$$

$$16y = 40$$

$$y = \frac{40}{16}$$

$$y = 2.5$$