

Day - 5

# LEAST COMMON MULTIPLE

## LESSON #1 - Introduction

→ Traditional method.

→ Factorisation

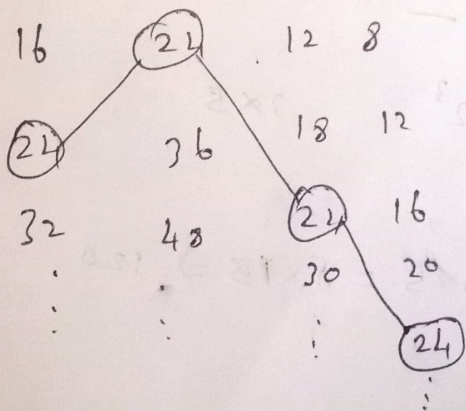
→ short-cut method

→ Long Division

## Traditional method

Find LCM for 8, 12, 6, 4?

$$\boxed{8 \quad 12 \quad 6 \quad 4} \Rightarrow 24$$



Answer : 24

# Factorisation method

1) Find Lcm 8, 12, 6, 4

$$\begin{array}{r|l} 2 & 8 \\ \hline 2 & 4 \\ \hline 2 & 2 \\ \hline & 1 \end{array}$$

$$2^3$$

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

$$2^2 \times 3$$

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

$$2 \times 3$$

$$\begin{array}{r|l} 2 & 4 \\ \hline 2 & 2 \\ \hline & 1 \end{array}$$

$$2^2$$

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

$$\text{Lcm } 24$$

find lcm 12, 8, 15

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

$$2^2 \times 3$$

$$\begin{array}{r|l} 2 & 8 \\ \hline 2 & 4 \\ \hline 2 & 2 \\ \hline & 1 \end{array}$$

$$2^3$$

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

$$3 \times 5$$

$$2^3 \times 3 \times 5 = 8 \times 15 \Rightarrow 120$$



## Long Division method

① Find LCM 8, 12, 6, 4?

$$\begin{array}{l} 2 \mid 8, 12, 6, 4 \\ 2 \mid 4, 6, 3, 2 \\ 2 \mid 2, 3, 3, 1 \\ 3 \mid 1, 3, 3, 1 \\ \hline 1, 1, 1, 1 \end{array}$$

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

Ex:

2) 12, 8, 15

$$\begin{array}{l} 2 \mid 12, 8, 15 \\ 2 \mid 6, 4, 15 \\ 2 \mid 3, 2, 15 \\ 3 \mid 3, 1, 15 \\ 5 \mid 1, 1, 5 \\ \hline 1, 1, 1 \end{array}$$

$$2^3 \times 3 \times 5 = 120$$

# SHORT-CUT method

①  $8, 12, 6, 4 ? = 12 \times 2 = 24$

$$\frac{12}{4}, \frac{12}{6}, \frac{12}{8}, \frac{24}{12}, \frac{24}{8}, \frac{24}{6}, \frac{24}{4}$$

②  $12, 6, 24, 8 ? = 24$

$$\frac{24}{12}, \frac{24}{6}, \frac{24}{8}$$

③  $12, 3, 9 ? = \boxed{12 \times 2} = \boxed{12 \times 3} = 36$   
 $\frac{12}{24}, \frac{12}{36}$

$$\frac{12}{9}, \frac{12}{3} \mid \frac{24}{9}, \frac{24}{3} \mid \frac{36}{9}, \frac{36}{3}$$

**Answer** : 36

4)  $4, 3, 11, 12 ? = 12 \times 11 = 132$   
 (11)   
 prime no.

$$\frac{12}{3}, \frac{12}{4}$$