

Tender Heart High School, 33-B, Chandigarh

Class - V

Date - 05.08.24

Subject - Mathematics

Teacher - Ms. Sushma

Ch-6

Exercise 6.5

A. Find the LCM by the prime factorization method

(i) 24, 36

Soln:-

$\begin{array}{r l} 2 & 24 \\ \hline 2 & 12 \\ \hline 2 & 6 \\ \hline 3 & 3 \\ \hline & 1 \end{array}$	$\begin{array}{r l} 2 & 36 \\ \hline 2 & 18 \\ \hline 3 & 9 \\ \hline 3 & 3 \\ \hline & 1 \end{array}$	$24 = 2 \times 2 \times 2 \times 3$ $36 = 2 \times 2 \times 3 \times 3$ $\text{LCM}(24, 36) = 2 \times 2 \times 3 \times 2 \times 3$ $= 72$
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(ii) 42, 70

Soln:-

$\begin{array}{r l} 2 & 42 \\ \hline 3 & 21 \\ \hline 7 & 7 \\ \hline & 1 \end{array}$	$\begin{array}{r l} 2 & 70 \\ \hline 5 & 35 \\ \hline 7 & 7 \\ \hline & 1 \end{array}$	$42 = 2 \times 3 \times 7$ $70 = 2 \times 5 \times 7$ $\text{LCM}(42, 70) = 2 \times 7 \times 3 \times 5$ $= 210$
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(iii) 12, 15

$\begin{array}{r l} 2 & 12 \\ \hline 2 & 6 \\ \hline 3 & 3 \\ \hline & 1 \end{array}$	$\begin{array}{r l} 3 & 15 \\ \hline 5 & 5 \\ \hline & 1 \end{array}$	$12 = 2 \times 2 \times 3$ $15 = 3 \times 5$ $\text{LCM} = 2 \times 2 \times 3 \times 5$ $= 60$
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(iv) 15, 25, 30

Soln:-

3	15	5	25	2	30
5	5	5	5	3	15
1		1		5	5
				1	

$15 = 3 \times 5$
 $25 = 5 \times 5$
 $30 = 2 \times 3 \times 5$
 $LCM(15, 25, 30) = 5 \times 3 \times 2 \times 5$
 $= 150 \text{ Ans}$

(v) 33, 22, 11

Soln:-

3	33	2	22	11	11
11	11	11	11		
1		1		1	

$33 = 3 \times 11$
 $22 = 2 \times 11$
 $11 = 1 \times 11$
 $LCM = 11 \times 3 \times 2$
 $= 66 \text{ Ans.}$

B. Find the LCM by the short method.

1. 30, 55

2	30, 55
3	15, 55
5	5, 55
11	1, 11
	1, 1

$LCM(30, 55) = 2 \times 3 \times 5 \times 11$
 $= 330$

2. 21, 42, 70

2	21, 42, 70
3	21, 21, 35
5	7, 7, 5
7	7, 7, 1
	1, 1, 1

$$\text{LCM}(21, 42, 70) = 2 \times 3 \times 5 \times 7 \\ = 210$$

(iii) 21, 28, 32

2	21, 28, 32
2	21, 14, 16
2	21, 7, 8
2	21, 7, 4
2	21, 7, 2
3	21, 7, 1
7	7, 7, 1
	1, 1, 1

$$\text{LCM}(21, 28, 32) = 2 \times 2 \times 2 \times 2 \times 2 \times 3 \times 7 \\ = 672$$

(iv) 21, 14, 35

2	21, 14, 35
3	21, 7, 35
5	7, 7, 35
7	7, 7, 7
	1, 1, 1

$$\text{LCM}(21, 14, 35) = 2 \times 3 \times 5 \times 7 \\ = 210$$