

02/09/20 Exercise 10 (B)

2. find the LCM of given numbers
by prime factorisation method.

a. 16, 48

$$\begin{array}{r}
 2 \overline{) 16} \\
 2 \overline{) 8} \\
 2 \overline{) 4} \\
 2 \overline{) 2} \\
 1 \overline{) 1} \\
 \hline
 2 \overline{) 48} \\
 2 \overline{) 24} \\
 2 \overline{) 12} \\
 2 \overline{) 6} \\
 1 \overline{) 3}
 \end{array}$$

16 = $2 \times 2 \times 2 \times 2$
 48 = $2 \times 2 \times 2 \times 2 \times 3$

LCM = $2 \times 2 \times 2 \times 2 \times 3 = 48$

b. 8, 12 and 16

$$\begin{array}{r}
 2 \overline{) 8} \\
 2 \overline{) 4} \\
 1 \overline{) 2} \\
 \hline
 2 \overline{) 12} \\
 2 \overline{) 6} \\
 1 \overline{) 3} \\
 \hline
 2 \overline{) 16} \\
 2 \overline{) 8} \\
 2 \overline{) 4} \\
 1 \overline{) 2}
 \end{array}$$

$$8 = 2 \times 2 \times 2$$

$$12 = 2 \times 2 \times 3$$

$$16 = 2 \times 2 \times 2 \times 2$$

$$\text{LCM} = 2 \times 2 \times 2 \times 3 \times 2 = 48$$

c. ~~20~~, 25

$$\begin{array}{r} 2 \mid 20 \\ 2 \mid 10 \\ \hline 5 \end{array}$$

$$\begin{array}{r} 5 \mid 25 \\ \hline 5 \end{array}$$

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

$$25 = \cancel{5 \times 5} = 5 \times 5$$

$$\text{LCM} = 2 \times 2 \times 5 \times 5 = 100$$

d. 40, 50

$$\begin{array}{r} 2 \overline{) 40} \\ \underline{20} \\ 20 \\ \underline{20} \\ 0 \\ 5 \end{array}$$

$$\begin{array}{r} 5 \overline{) 50} \\ \underline{50} \\ 0 \\ 12 \end{array}$$

40 - $2 \times 2 \times 2 \times 5$

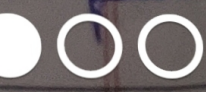
50 - $5 \times 5 \times 2$

100 - $2 \times 2 \times 2 \times 5 \times 5 = 200$

e, 56, ~~64~~ 64

$$\begin{array}{r} 2 \overline{) 56} \\ \underline{28} \\ 28 \\ \underline{28} \\ 0 \\ 7 \\ \underline{7} \\ 0 \\ 1 \end{array}$$

$$\begin{array}{r} 2 \overline{) 64} \\ \underline{32} \\ 32 \\ \underline{32} \\ 0 \\ 8 \\ \underline{8} \\ 0 \\ 4 \\ \underline{4} \\ 0 \\ 2 \\ \underline{2} \\ 0 \\ 1 \end{array}$$



$$56 = 2 \times 2 \times 2 \times 7$$

$$64 = 2 \times 2 \times 2 \times 2 \times 2 \times 2$$

$$\text{LCM} = 2 \times 2 \times 2 \times 7 \times 2 \times 2 \times 2$$

f. 96, 144

$$\begin{array}{r} 2 \overline{) 96} \\ 2 \overline{) 48} \\ 2 \overline{) 24} \\ 2 \overline{) 12} \\ 2 \overline{) 6} \\ 3 \overline{) 3} \\ \hline 1 \end{array}$$

$$\begin{array}{r} 2 \overline{) 144} \\ 2 \overline{) 72} \\ 3 \overline{) 36} \\ 2 \overline{) 12} \\ 2 \overline{) 6} \\ 3 \overline{) 3} \\ \hline 1 \end{array}$$

$$96 = 2 \times 2 \times 2 \times 2 \times 2 \times 3$$

$$144 = 2 \times 2 \times 3 \times 2 \times 2 \times 3$$

$$\text{LCM} = 2 \times 2 \times 3 \times 2 \times 2 \times 2 \times 3 = 288 \checkmark$$

g. 36, 42

$$\begin{array}{r}
 2 \overline{) 36} \\
 2 \overline{) 12} \\
 2 \overline{) 6} \\
 3 \overline{) 3} \\
 1 \overline{) 1}
 \end{array}$$

$$\begin{array}{r}
 2 \overline{) 42} \\
 3 \overline{) 21} \\
 7 \overline{) 7} \\
 1 \overline{) 1}
 \end{array}$$

$$\begin{array}{l}
 36 = 3 \times 2 \times 2 \times 3 \\
 42 = 2 \times 3 \times 7
 \end{array}$$

LCM - $2 \times 3 \times 2 \times 3 \times 7 = 252$

h. 21, 36 :-

$$\begin{array}{r}
 3 \overline{) 21} \\
 7 \overline{) 7} \\
 1 \overline{) 1}
 \end{array}$$

$$\begin{array}{r}
 3 \overline{) 36} \\
 2 \overline{) 12} \\
 2 \overline{) 6} \\
 3 \overline{) 3} \\
 1 \overline{) 1}
 \end{array}$$

~~21~~ 21: 3×7
 $3 \times 2 \times 2 \times 3$

LCM - $3 \times 7 \times 2 \times 2 \times 3 = 252$

i: 15, 45 :-

$$\begin{array}{r}
 3 \overline{) 15} \\
 5 \overline{) 5} \\
 1 \overline{) 1}
 \end{array}$$

$$\begin{array}{r}
 5 \overline{) 45} \\
 3 \overline{) 9} \\
 3 \overline{) 3} \\
 1 \overline{) 1}
 \end{array}$$

$$15 = 3 \times 5$$

$$\text{LCM} = 5 \times 3 \times 3 = 45$$

$$45 = 5 \times 3$$

5. ~~10, 20, 30~~ 10, 20, 30

$$\begin{array}{r} 2 \overline{) 10} \\ 5 \overline{) 5} \\ 1 \end{array}$$

$$\begin{array}{r} 2 \overline{) 20} \\ 2 \overline{) 10} \\ 5 \overline{) 5} \\ 1 \end{array}$$

$$\begin{array}{r} 3 \overline{) 30} \\ 10 \end{array}$$

$$\begin{array}{r} 2 \overline{) 30} \\ 3 \overline{) 15} \\ 5 \overline{) 5} \\ 1 \end{array}$$

$$10 = 2 \times 5$$

$$\text{LCM} = 2 \times 5 \times 2 \times 3 = 60$$

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

$$30 = 2 \times 3 \times 5$$