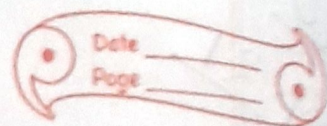


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3.9.21



⑤ Find the LCM of the given numbers by prime factorisation method.

① 16 and 48

$$\begin{array}{r|l} 2 & 16 \\ \hline 2 & 8 \\ \hline 2 & 4 \\ \hline & 2 \end{array}$$

$$\begin{array}{r|l} 2 & 48 \\ \hline 2 & 24 \\ \hline 2 & 12 \\ \hline 2 & 6 \\ \hline & 3 \end{array}$$

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

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

② 8, 12 and 16

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

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

$$\begin{array}{r|l} 2 & 16 \\ \hline 2 & 8 \\ \hline 2 & 4 \\ \hline & 2 \end{array}$$

$$8 = 2 \times 2 \times 2$$
$$12 = 2 \times 2 \times 3$$
$$16 = 2 \times 2 \times 2 \times 2$$

$$\text{LCM} = 2 \times 2 \times 2 \times 3 \times 2 \times 2 = 96$$

c) 20 and 25

$$\begin{array}{r|l} 5 & 20 \\ \hline 2 & 4 \\ \hline & 2 \end{array}$$

$$\begin{array}{r|l} 5 & 25 \\ \hline 5 & 5 \\ \hline & 1 \end{array}$$

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

$$25 = 5 \times 5 \times 1$$

$$\text{LCM} = 5 \times 2 \times 2 \times 5 \times 1 = 100$$

d) 40 and 50

$$\begin{array}{r|l} 2 & 40 \\ \hline 5 & 20 \\ \hline 2 & 4 \\ \hline & 2 \end{array}$$

$$\begin{array}{r|l} 2 & 50 \\ \hline 5 & 25 \\ \hline & 5 \end{array}$$

$$40 = 2 \times 5 \times 2 \times 2$$

$$50 = 2 \times 5 \times 5$$

$$\text{LCM} = 2 \times 5 \times 2 \times 2 \times 5 = 200$$

Q 56 and 64

$$\begin{array}{r|l} 2 & 56 \\ \hline 2 & 28 \\ \hline 2 & 14 \\ \hline & 7 \end{array}$$

$$\begin{array}{r|l} 2 & 64 \\ \hline 2 & 32 \\ \hline 2 & 16 \\ \hline 2 & 8 \\ \hline 2 & 4 \\ \hline & 2 \end{array}$$

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

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

$$\text{LCM} = 2 \times 2 \times 2 \times 7 \times 2 \times 2 \times 2 = 448$$

Q 96 and 144

$$\begin{array}{r|l} 2 & 96 \\ \hline 2 & 48 \\ \hline 2 & 24 \\ \hline 2 & 12 \\ \hline 2 & 6 \\ \hline & 3 \end{array}$$

$$\begin{array}{r|l} 2 & 144 \\ \hline 2 & 72 \\ \hline 2 & 36 \\ \hline 2 & 18 \\ \hline 3 & 9 \\ \hline & 3 \end{array}$$

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

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

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

g) 36 and 42

$$\begin{array}{r|l} 2 & 36 \\ \hline 2 & 18 \\ \hline 3 & 9 \\ \hline & 3 \end{array}$$

$$\begin{array}{r|l} 2 & 42 \\ \hline 3 & 21 \\ \hline & 7 \end{array}$$

$$36 = 2 \times 2 \times 3 \times 3$$

$$42 = 2 \times 3 \times 7$$

$$\text{LCM} = 2 \times 2 \times 3 \times 3 \times 7 = 252$$

h) 21 and 36

$$\begin{array}{r|l} 3 & 21 \\ \hline & 7 \end{array}$$

$$\begin{array}{r|l} 3 & 36 \\ \hline 2 & 12 \\ \hline 2 & 6 \\ \hline & 3 \end{array}$$

$$21 = 3 \times 7$$

$$36 = 3 \times 2 \times 2 \times 3$$

$$\text{LCM} = 3 \times 7 \times 2 \times 2 \times 3 = 252$$

(i) 15 and 45

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

$$\begin{array}{r|l} 3 & 45 \\ \hline 5 & 15 \\ \hline & 3 \end{array}$$

$$15 = 3 \times 5$$

$$45 = 3 \times 5 \times 3$$

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

(j) 10, 20 and 30

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

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

$$\begin{array}{r|l} 2 & 30 \\ \hline 5 & 15 \\ \hline & 3 \end{array}$$

$$10 = 2 \times 5$$

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

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

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