

2.a)

$$\begin{array}{r} 2 \overline{) 16} \\ 2 \overline{) 8} \\ 2 \overline{) 4} \\ 2 \end{array}$$

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

$$16 = \underbrace{2 \times 2 \times 2 \times 2}$$

$$48 = \underbrace{2 \times 2 \times 2 \times 2} \times 3$$

$$\begin{array}{c} \downarrow \quad \downarrow \quad \downarrow \quad \downarrow \\ \text{LCM} = 2 \times 2 \times 2 \times 2 \times 3 = 48 \end{array}$$

b)

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

$$8 = \underbrace{2 \times 2 \times 2}$$

$$12 = \underbrace{2 \times 2 \times 3}$$

$$16 = \underbrace{2 \times 2 \times 2 \times 2}$$

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

c)

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

$$\begin{array}{r} 5 \overline{) 25} \\ 5 \end{array}$$

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

$$25 = 5 \times 5$$

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

d)

$$\begin{array}{r} 2 \overline{) 40} \\ 2 \overline{) 20} \\ 2 \overline{) 10} \\ 5 \end{array}$$

$$\begin{array}{r} 2 \overline{) 50} \\ 5 \overline{) 25} \\ 5 \end{array}$$

~~LCM~~

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

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

$$2 \times 2 \times 5 \times 2 \times 5 = 200$$

e)

$$\begin{array}{r} 2 \overline{)56} \\ 2 \overline{)28} \\ 2 \overline{)14} \\ 7 \end{array}$$

$$\begin{array}{r} 2 \overline{)64} \\ 2 \overline{)32} \\ 2 \overline{)16} \\ 2 \overline{)8} \\ 2 \overline{)4} \\ 2 \end{array}$$

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

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

$$LCM = 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 7 = 448$$

f)

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

$$\begin{array}{r} 2 \overline{)144} \\ 2 \overline{)72} \\ 2 \overline{)36} \\ 2 \overline{)18} \\ 3 \overline{)9} \\ 3 \end{array}$$

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

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

$$LCM = 2 \times 2 \times 2 \times 2 \times 2 \times 3 \times 3 = 288 \quad \checkmark$$

g) ~~36~~
$$\begin{array}{r} 2 \overline{) 36} \\ 2 \overline{) 18} \\ 3 \overline{) 9} \\ 3 \end{array}$$

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

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

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

$$LCM = 2 \times 2 \times 3 \times 7 \times 3 = 252 \quad \checkmark$$

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

$$\begin{array}{r} 2 \overline{) 36} \\ 2 \overline{) 18} \\ 3 \overline{) 9} \\ 3 \end{array}$$

$$21 = 3 \times 7$$

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

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

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

$$\begin{array}{r} 3 \overline{) 45} \\ 3 \overline{) 15} \\ 5 \end{array}$$

$$15 = 3 \times 5$$

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

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

$$\begin{array}{r} 2 \overline{) 10} \\ 5 \end{array} \quad \begin{array}{r} 2 \overline{) 20} \\ 2 \overline{) 10} \\ 5 \end{array} \quad \begin{array}{r} 2 \overline{) 30} \\ 3 \overline{) 15} \\ 5 \end{array}$$

$$\begin{aligned} 10 &= 2 \times 5 \\ 20 &= 2 \times 5 \times 2 \\ 30 &= 2 \times 5 \times 3 \end{aligned}$$

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