

1. (i) $8 = 1, 2, 4, 8$
 $12 = 1, 3, 4, 6, 12$
 $24 = 1, 3, 4, 6, 8, 12, 24$

Ans = LCM = 24

Exercise - Revision

1. $2 \mid 108, 288, 420$

$2 \mid 54, 144, 210$

$3 \mid 27, 72, 105$

~~$3 \mid 9, 24, 35$~~

~~$3 \mid 3, 8, 35$~~

HCF = 12

Wrong

$2 \mid 108, 288, 420$
 $2 \mid 54, 144, 210$
 $3 \mid 27, 72, 105$
 $3 \mid 9, 24, 35$
 $3 \mid 3, 8, 35$

(ii)

$$\begin{array}{r}
 2 \overline{) 36, 54, 138} \\
 \underline{36} \\
 3 \overline{) 18, 27, 69} \\
 \underline{18} \\
 6 \\
 \underline{6} \\
 9, 23
 \end{array}$$

$$LCM = 6$$

2. (i)

$$\begin{array}{r}
 2 \overline{) 72, 80, 252} \\
 \underline{72} \\
 2 \overline{) 36, 40, 126} \\
 \underline{36} \\
 2 \overline{) 18, 20, 63} \\
 \underline{18} \\
 3 \overline{) 9, 10, 63} \\
 \underline{9} \\
 3 \overline{) 3, 10, 21} \\
 \underline{3} \\
 1, 10, 7
 \end{array}$$

$$LCM = 2 \times 2 \times 2 \times 3 \times 3 \times 1 \times 10 \times 7 = 504$$

ii)

$$\begin{array}{r}
 2 \overline{) 48, 66, 120} \\
 \underline{48} \\
 2 \overline{) 24, 33, 60} \\
 \underline{24} \\
 2 \overline{) 12, 33, 30} \\
 \underline{12} \\
 3 \overline{) 6, 33, 15} \\
 \underline{6} \\
 2, 11, 5
 \end{array}$$

$$LCM = 2 \times 2 \times 2 \times 3 \times 2 \times 11 \times 5 = 2640$$

Rough

$$\begin{array}{r}
 2 \overline{) 36, 54, 138} \\
 \underline{36} \\
 3 \overline{) 18, 27, 69} \\
 \underline{18} \\
 6, 27, 69 \\
 \underline{6} \\
 9, 23
 \end{array}$$

$$\begin{array}{r}
 5 \overline{) 20} \\
 \underline{10} \\
 10 \\
 \underline{10} \\
 0
 \end{array}$$

3. (i) True

(ii) True

(iii) True

(iv) True

4. Rough

$$\begin{array}{r} 36 \text{ ①} \\ \times 2 \\ \hline 72 \end{array}$$

$$\begin{array}{r} 36 \text{ ①} \\ \times 3 \\ \hline 108 \end{array}$$

$$\begin{array}{r} 36 \text{ ②} \\ \times 4 \\ \hline 144 \end{array}$$

$$\begin{array}{r} 36 \text{ ③} \\ \times 8 \\ \hline 288 \end{array}$$

$$\begin{array}{r} 36 \text{ ④} \\ \times 7 \\ \hline 252 \end{array}$$

$$\begin{array}{r} 36 \text{ ⑤} \\ \times 5 \\ \hline 180 \\ \hline 36 \text{ ⑥} \\ \times 6 \\ \hline 216 \end{array}$$

$$\begin{array}{r} 336 \\ 36 \overline{) 11808} \\ \underline{-108} \\ 0129 \\ \underline{-108} \\ 0216 \\ \underline{-216} \\ 000 \end{array}$$

Ans = 336

$$5. \begin{array}{r} 1152 \\ - 48 \\ \hline 1104 \end{array}$$

Ans = 1104

$$\begin{array}{r} 1104 \\ + 48 \\ \hline 1152 \end{array}$$

$$6. \begin{array}{l} 2 \overline{) 28,42} \\ 7 \overline{) 14,21} \\ \hline 2, 3 \end{array}$$

Rough

$$\begin{array}{r} 28 \\ \times 3 \text{ ②} \\ \hline 84 \end{array}$$

Ans = 84 is the LCM of the given numbers

Q. (ii)

$$\begin{array}{r}
 2 \overline{) 28, 42} \\
 7 \overline{) 14, 21} \\
 \hline
 2, 3
 \end{array}$$

Ans = 14 is the H.C.F of the given numbers.

$$\begin{array}{r}
 7 \circ \quad 2 \overline{) 140, 168} \\
 \quad 2 \overline{) 70, 84} \\
 \quad \quad 7 \overline{) 35, 42} \\
 \quad \quad \quad 5, 6
 \end{array}$$

LCM = 840

HCF = 28

$$\begin{array}{r}
 8 \circ \quad 2 \overline{) 108, 450} \\
 \quad 3 \overline{) 54, 225} \\
 \quad \quad 3 \overline{) 18, 75} \\
 \quad \quad \quad 6, 25
 \end{array}$$

LCM = 2700

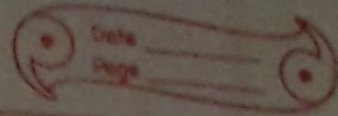
HCF = 18

~~X~~

Rough

$$\begin{array}{r}
 84 \\
 2 \overline{) 168} \\
 \underline{-168} \\
 00 \\
 2 \overline{) 84} \\
 \underline{-84} \\
 00 \\
 35 \\
 2 \overline{) 70} \\
 \underline{-70} \\
 00 \\
 2 \overline{) 0} \\
 \underline{-0} \\
 00 \\
 54 \\
 2 \overline{) 108} \\
 \underline{-108} \\
 00 \\
 2 \overline{) 42} \\
 \underline{-42} \\
 00 \\
 2 \overline{) 84} \\
 \underline{-84} \\
 00 \\
 225 \\
 2 \overline{) 450} \\
 \underline{-450} \\
 00 \\
 28 \\
 10 \times 28 \\
 \underline{280} \\
 00140 \\
 \times 6 \\
 \hline
 18 \quad 840 \\
 3 \overline{) 54} \quad 75 \\
 \underline{-3} \downarrow \quad 225 \\
 24 \quad \underline{-21} \downarrow \\
 24 \quad \underline{015} \\
 00 \quad \underline{00}
 \end{array}$$

Hw
25-06-2021



Exercise 8 (c)

$$2 \cdot (i) \quad 2 \overline{) 18, 24, 96}$$

$$2 \overline{) 9, 12, 48}$$

$$2 \overline{) 9, 6, 24}$$

$$3 \overline{) 9, 3, 12}$$

$$3 \overline{) 3, 1, 4}$$

$$\begin{array}{r} 2 \overline{) 96} \\ \underline{- 18} \\ 78 \\ \underline{- 60} \\ 18 \\ \underline{- 16} \\ 2 \end{array}$$

$$\text{LCM} = 2 \times 2 \times 2 \times 3 \times 3 \times 1 \times 4$$

$$= \underline{\underline{288}}$$

$$\begin{array}{r}
 2 \mid 100, 150, 200 \\
 \hline
 2 \mid 50, 75, 100 \\
 \hline
 5 \mid 25, 75, 50 \\
 \hline
 5, 15, 10
 \end{array}$$

$$\text{LCM} = 2 \times 2 \times 5 \times 5 \times 15 \times 10 =$$

$$\begin{aligned}
 2 \cdot 100 &= 2 \times 2 \times 5 \times 5 = 2^2 \times 5^2 = (2 \times 2) \times (5 \times 5) \\
 150 &= 2 \times 3 \times 5 \times 5 = 2^1 \times 3^1 \times 5^2 = \frac{25}{\times 3} \\
 200 &= 2 \times 2 \times 2 \times 5 = 2^3 \times 5^2 = (2 \times 2 \times 2) \times (5 \times 5)
 \end{aligned}$$

$$\begin{array}{r}
 25 \quad 20 \\
 \sqrt{50} \quad \times 5 \\
 \hline
 10 \quad 100 \\
 \hline
 10 \quad \times 15 \\
 \hline
 150 \quad 500 \\
 \hline
 2 \sqrt{75} \quad \times 10 \\
 \hline
 15 \quad 1500 \\
 \hline
 15 \quad \times 10000 \\
 \hline
 15000
 \end{array}$$

$$\begin{array}{r}
 2 \mid 100 \quad 2 \mid 150 \quad 2 \mid 200 \\
 \hline
 2 \mid 50 \quad 3 \mid 75 \quad 2 \mid 100 \\
 \hline
 5 \mid 25 \quad 5 \mid 25 \quad 2 \mid 50 \\
 \hline
 5 \quad 5 \quad 5 \mid 25 \\
 \hline
 \quad \quad \quad 5
 \end{array}$$

$$\text{LCM} = 600$$

Rough

$$\begin{array}{r}
 20 \\
 \times 5 \\
 \hline
 100
 \end{array}
 \quad
 \begin{array}{r}
 2 \times 2 \times 5 \times 5 \times 2 \times 3 \times 5 \times 5 \times 2 \times 2 \times 2 \times 5 \times 5 \\
 20 \\
 \times 5 \\
 \hline
 100 \\
 \times 2 \\
 \hline
 200
 \end{array}
 \quad
 \begin{array}{r}
 200 \\
 \times 3 \\
 \hline
 600
 \end{array}$$

(iii) 14, 21, 98

$$14 = 2 \times 7 = 2^1 \times 7^1$$

$$21 = 3 \times 7 = 3^1 \times 7^1$$

$$98 = 2 \times 7 \times 7 = 2^1 \times 7^2$$

$$2 \overline{) 14}$$

$$7$$

$$3 \overline{) 21}$$

$$7$$

$$2 \overline{) 14, 21, 98}$$

$$7 \overline{) 7, 21, 49}$$

$$1, 3, 7$$

$$2 \overline{) 98}$$

$$7 \overline{) 49}$$

$$7$$

$$\text{LCM} = 2 \times 7 \times 1 \times 3 \times 7 = 294$$

$$\begin{array}{r} 2 \overline{) 98} \\ 49 \text{ ①} \\ \hline 98 \end{array}$$

$$\begin{array}{r} 21 \\ \times 14 \\ \hline 84 \\ + 21 \\ \hline 294 \end{array}$$

(iv) ~~22, 12, 33~~

$$22 = 2 \times 11 = 2^1 \times 11^1$$

$$12 = 11 \times 1 = 11^1$$

$$33 = 3 \times 11 = 3^1 \times 11^1 = 6 \times 12$$

$$= 726$$

Find the LCM 18, 24, 96 by Prime factor method.

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

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

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

(V)

$$18 = 2 \times 3 \times 3 = 2^1 \times 3^2$$
$$24 = 2 \times 2 \times 2 \times 3 = 2^3 \times 3^1$$
$$96 = 2 \times 2 \times 2 \times 2 \times 2 \times 3 = 2^5 \times 3^1$$

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

$$\rightarrow 2 \times 2 \times 2 \times 2 \times 2 \times 3 \times 3$$

$$= 32 \times 9 = 288$$

$$17 \overline{) 29, 82, 21}$$

$$2, 5, 3$$

$$LCM = 2 \times 3 \times 5 \times 17 = 510$$

3. $HCF = 50, LCM = 300$

one number = 150

other number =

$$\begin{array}{r} 300 \\ \times 150 \\ \hline 000 \\ 1500 \\ + 300 \\ \hline 18000 \\ \hline 150 \\ \hline 0 \end{array}$$

$$\frac{HCF \times LCM}{\text{one number}}$$

$$= \frac{50 \times 300}{150}$$

$$= 100$$

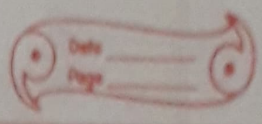
$$= \underline{\underline{100}}$$

$$150 \text{ (1)}$$

$$\begin{array}{r} \times 2 \\ \hline 300 \end{array}$$

$$\begin{array}{r} 1020 \\ 150 \overline{) 18000} \\ \underline{-150} \\ 030 \\ \underline{20} \\ 300 \\ \underline{-300} \\ 0000 \\ \underline{-0} \\ 0 \end{array}$$

$$\begin{array}{r} 1020 \\ + 150 \\ \hline 1170 \end{array}$$



4. Product of two numbers
= 432

LCM = 72

HCF =

Product of two
numbers

85
x 6
510

LCM

$$= \frac{432}{72}$$

$$= \frac{432}{72}$$

$$= 6$$

5. Product of two numbers
= 19,200

HCF = 40

LCM = ?

Product of two
number

37
x 3
111

480 HCF

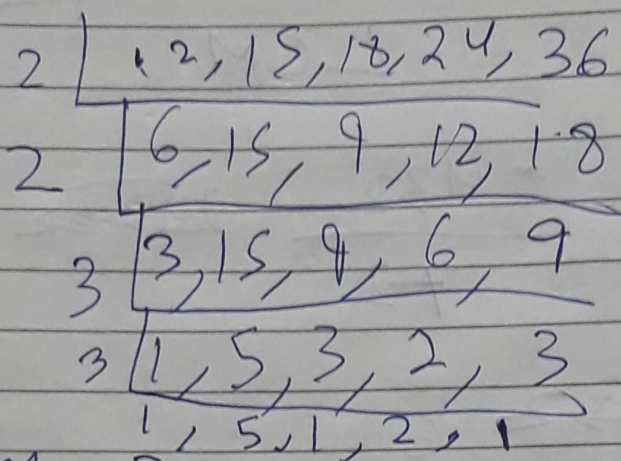
LCM = 480

$$\begin{array}{r} 4 \overline{) 1920} \\ \underline{160} \\ 320 \\ \underline{320} \\ 0 \end{array}$$

$$\begin{array}{r} 4 \overline{) 1920} \\ \underline{160} \\ 320 \\ \underline{320} \\ 0 \end{array}$$

6. Find the smallest number ~~is 432~~ and ~~th~~ which when divided by 12, 18, 24 and 36 leaves no remainder.

Ans-

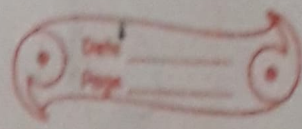


~~LCM = 2 \times 2 \times 3 \times 1 \times 5 \times 3 \times 2 \times 3~~

$$\begin{array}{r}
 360 \\
 \times 1 \\
 \hline
 360
 \end{array}$$
 LCM = $2 \times 2 \times 3 \times 3 \times 1 \times 5 \times 1 \times 2 \times 1 = 360$

$$\begin{array}{r}
 36 \\
 \times 5 \\
 \hline
 180 \\
 \times 2 \\
 \hline
 360
 \end{array}$$

⊕ Find the smallest number which when increased by 1 is exactly divisible by 12, 18, 24, 36, 40.



$$\begin{array}{l} 2 \overline{) 12, 18, 24, 32, 40} \\ 2 \overline{) 6, 9, 12, 16, 20} \\ 2 \overline{) 3, 9, 6, 8, 10} \\ 3 \overline{) 3, 9, 3, 4, 5} \\ 1, 3, 1, 4, 5 \end{array}$$

$$LCM = 2 \times 2 \times 2 \times 3 \times 1 \times 3 \times 1 \times 4 \times 5$$

$$= 72$$

$$\begin{array}{r} 72 \\ \times 4 \\ \hline 288 \\ \times 5 \text{ (4)} \\ \hline 1440 \text{ (1)} \\ \hline 1440 \\ \hline 1440 \end{array}$$