



Exercise 2E

(ii) 186 and 403

2	186	13	403
3	93	31	31
31	31		1
	1		

$$186 = 2 \times 3 \times 31$$

$$403 = 31 \times 13$$

$$\text{HCF} = 31$$

$$\text{LCM} = 31 \times 13 \times 6 = 2418$$

$$\text{Now, HCF} \times \text{LCM} = 31 \times 2418 = 74958$$

$$\text{Product of the two numbers} = 186 \times 403 = 74958$$

$$\therefore \text{HCF} \times \text{LCM} = \text{Product of the two numbers}$$

Verified.

(iii) 490 and 1155

2	490	5	1155
5	245	7	231
7	49	3	33
7	7	11	11
	1		1

$$490 = 7 \times 7 \times 2 \times 5$$

$$1155 = 5 \times 7 \times 3 \times 11$$

$$\text{HCF} = 7 \times 5 = 35$$

$$\text{LCM} = 7 \times 5 \times 7 \times 2 \times 3 \times 11 = 16170$$

$$\text{Now, HCF} \times \text{LCM} = 35 \times 16170 = 565950$$

$$\text{Product of the two numbers} = 490 \times 1155 = 565950$$

$$\therefore \text{HCF} \times \text{LCM} = \text{Product of the two numbers}$$

Verified.

Q17

**Answer :**

$$\text{Product of the two numbers} = 2160$$

$$\text{HCF} = 12$$

We know that  $\text{LCM} \times \text{HCF} = \text{Product of the two numbers}$

$$\therefore \text{LCM} = \frac{2160}{12} = 180$$

Q18

**Answer :**

Product of the two numbers = 2560

LCM = 320

We know that

$\text{LCM} \times \text{HCF} = \text{Product of the two numbers}$

$$\therefore \text{HCF} = \frac{2560}{320} = 8$$

Q19

**Answer :**

HCF = 145

LCM = 2175

One of the number = 725

We know that

$\text{HCF} \times \text{LCM} = \text{Product of two numbers}$

$$\therefore \text{Other number} = \frac{145 \times 2175}{725} = 435$$

Q20

**Answer :**

HCF = 131

LCM = 8253

One of the number = 917

We know that

$\text{LCM} \times \text{HCF} = \text{Product of two numbers}$

$$\text{Other number} = \frac{8253 \times 131}{917}$$

$\therefore$  The other number is 1179.

Q21

**Answer :**

The given numbers are 15, 20, 24, 32 and 36.

The smallest number divisible by the numbers given above will be their LCM.

$$\begin{array}{r} 2 \overline{) 15, 20, 24, 32, 36} \end{array}$$

$$\begin{array}{r} 3 \overline{) 15, 10, 12, 16, 18} \end{array}$$

$$\begin{array}{r} 5 \overline{) 5, 10, 4, 16, 6} \end{array}$$

$$\begin{array}{r} 2 \overline{) 1, 2, 4, 16, 6} \end{array}$$

$$\begin{array}{r} 2 \overline{) 1, 1, 2, 8, 3} \end{array}$$

$$\begin{array}{r} 2 \overline{) 1, 1, 1, 4, 3} \end{array}$$

$$\begin{array}{r} 2 \overline{) 1, 1, 1, 2, 3} \end{array}$$

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

$$1, 1, 1, 1, 1$$

$$\begin{aligned} \text{LCM} &= 2^5 \times 3^2 \times 5 \\ &= 1440 \end{aligned}$$

$\therefore$  The least number divisible by 15, 20, 24, 32 and 36 is 1440.

Q22

**Answer :**

25, 40 and 60 exactly divides the least number that is equal to their LCM.

So, the required number that leaves 9 as a remainder will be  $\text{LCM} + 9$ .

Finding the LCM:

$$\begin{array}{r} 2 \overline{) 25, 40, 60} \end{array}$$

$$\begin{array}{r} 2 \overline{) 25, 20, 30} \end{array}$$

$$\begin{array}{r} 2 \overline{) 25, 10, 15} \end{array}$$

$$\begin{array}{r} 3 \overline{) 25, 5, 15} \end{array}$$

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

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

$$1, 1, 1$$

$$\text{LCM} = 2^3 \times 3 \times 5^2 = 600$$

$\therefore$  Required number =  $600 + 9 = 609$

Q23

**Answer :**

LCM of 16, 18, 24 and 30:

$$\begin{array}{r} 2 \overline{) 16, 18, 24, 30} \end{array}$$

$$\begin{array}{r} 2 \overline{) 8, 9, 12, 15} \end{array}$$

$$\begin{array}{r} 2 \overline{) 4, 9, 6, 15} \end{array}$$

$$\begin{array}{r} 2 \overline{) 2, 9, 3, 15} \end{array}$$

$$\begin{array}{r} 3 \overline{) 1, 9, 3, 15} \end{array}$$

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

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

$$1, 1, 1, 1$$

$$\text{LCM} = 2^4 \times 3^2 \times 5 = 720$$

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