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class- VI sec-B

Ex-8(C)

1. Using the common multiple method, find the lcm of the following:

(i) 8, 12 and 24

8 = 8, 16, 24, 32, 40, 48, 56, 64, 72, 80

12 = 12, 24, 36, 48, 60, 72, 84, 96, 108

~~10 = 20, 30, 40, 50, 60, 70, 80, 90, 100~~

24 = 24, 48, 72, 96, 120, 144, 168, 192, 216, 240

lcm = 24

(ii) 10, 15 and 20

10 = 10, 20, 30, 40, 50, (60), 70, 80, 90, 100

15 = 15, 30, 45, (60), 75, 90, 105, 120, 135, 150

20 = 20, 40, (60), 80, 100, 120, 140, 160, 180, 200

lcm = 60

(iii) 3, 6, 9 and 12

3 = 3, 6, 9, 12, 15, 18, 21, 24, 27, 30

6 = 6, 12, 18, 24, 30, (36), 42, 48, 54, 60

9 = 9, 18, 27, (36), 45, 54, 63, 72, 81, 90

12 = 12, 24, (36), 48, 60, 72, 84, 96, 108, 120

lcm = 36

2. (i) 18, 24 and 96

~~18 = 2 × 3 × 3~~
~~24 = 2 × 2 × 2 × 3~~
~~96~~ 2 × 2 × 2 × 2 × 2 × 3

2	18, 24, 96
3	9, 12, 48
2	3, 4, 16
2	3, 2, 8
	3, 1, 4

$2 \times 3 \times 2 \times 2 \times 3 \times 1 \times 4 = 288$

(ii) 100, 150 and 200

2	100, 150, 200
5	50, 75, 100
2	10, 15, 20
5	5, 15, 10
	1, 3, 2

$2 \times 5 \times 2 \times 5 \times 3 \times 2 = 600$

(iii) 14, 21 and 98

2	14, 21, 98
7	7, 21, 49
	1, 3, 7

$2 \times 7 \times 1 \times 3 \times 7 = 294$

(iv) 22, 121 and 33

121

11 | 22, 121, 33

2, 11, 3

22 = 11 × 2

33 = 11 × 3

121 = 11 × 11

121 × 6 = 726

11 | 22, 121, 33

2, 11, 3

LCM = 11 × 2 × 11 × 3 = 726

(v) 34, 85 and 51

5 | 34, 85, 51

34, 17,

3 | 34, 85, 51

34

34 = 2 × 2 × 17

85 = 5 × 17

51 = 3 × 17

LCM = 17 × 3 × 5 × 2 × 2

5 | 85

17

3 | 51

17

~~17 × 2 × 2~~

~~34 = 2 × 2 × 2 × 4~~

34 = 2 × 17

85 = 5 × 17

51 = 3 × 17

LCM = 2 × 5 × 3 × 17

= 510

3. The lcm and hcf of two numbers is 50 and 300 respectively. If one number is 150, find the other one.

Hcf x lcm = Product of two numbers

$$B = \frac{\text{hcf} \times \text{lcm}}{A}$$

$$= B = \frac{50 \times 300^{2}}{150} = 100$$

4. The product of two numbers is 432 and their lcm is 72. Find their H.C.F.

$$\text{Hcf} = \frac{A \times B}{\text{lcm}}$$

① $LCM \times HCF = A \times B$

$\Rightarrow 72 \times HCF = 432$

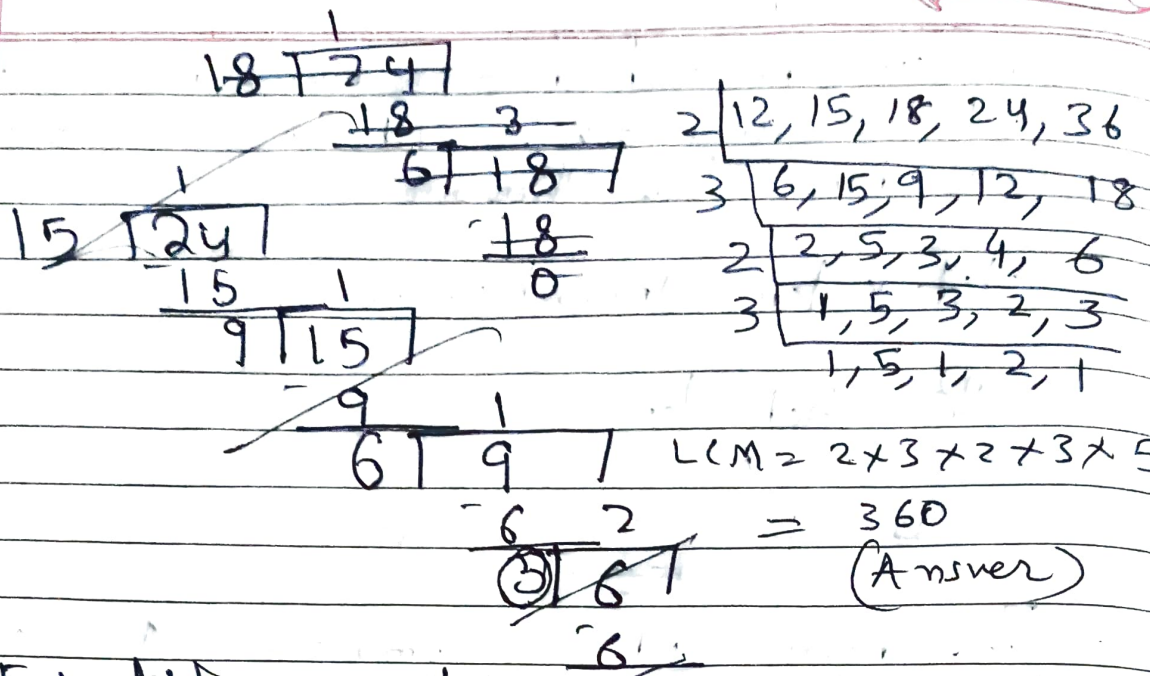
$\Rightarrow HCF = \frac{432}{72} = 6$ (Answer)

5. The product of two numbers is 19200 and their Hcm is 40. Find their lcm.

$$\text{Hcf} \times \text{lcm} = A \times B$$
$$40 \times \text{lcm} = 19200$$

$$\text{lcm} = \frac{19200}{40} = 480$$

6. Find the smallest number which when divided by 12, 15, 18, 24 and 36 leaves no remainder.



2 | 12, 15, 18, 24, 36
3 | 6, 15, 9, 12, 18
2 | 2, 5, 3, 4, 6
3 | 1, 5, 3, 2, 3
1, 5, 1, 2, 1

LCM = 2×3×2×3×5×2
= 360 (Answer)

7. Find the smallest number which when increased by one is exactly divisible by 12, 18, 24, 32 and 40.

LCM

$12 = 3 \times 2 \times 2$
$18 = 2 \times 3 \times 3$
$24 = 2 \times 3 \times 2 \times 2$
$32 = 2 \times 2 \times 2 \times 2 \times 2$
$40 = 2 \times 2 \times 2 \times 5$

2 | 12, 18, 24, 32, 40
2 | 6, 9, 12, 16, 20
2 | 3, 9, 6, 8, 10
3 | 3, 9, 3, 4, 5
1, 3, 1, 4, 5

LCM = $2 \times 2 \times 2 \times 3 \times 3 \times 4 \times 5 = 1440$

1440 is exactly divisible by 12, 18, 24, 32, 40

? + 1 = 1440

Ans = 1440 − 1
= 1439

8. Find the smallest number which, on being decreased by 3, is completely divisible by 18, 36, 32 and 27

Ans:-

2	18, 36, 32, 27
3	9, 18, 16, 27
3	3, 6, 16, 9
2	1, 2, 16, 3
	1, 1, 8, 3

$\text{Lcm} = 2 \times 3 \times 3 \times 2 \times 8 \times 3$

$= \text{Lcm} = 864$

$\left(\frac{3}{0}\right) - 3 = 864$

$\Rightarrow \text{Ans} = 864 + 3$

$= 867$

$$\begin{array}{r} {\scriptstyle 1} \\ 36 \times \\ 3 \\ \hline 108 \\ \times \quad 8 \\ \hline 864 \end{array}$$