MONTH : AUGUST

SESSION : 8

CLASS : V

SUBJECT : MATHEMATICS

CHAPTER NUMBER: 8

CHAPTER NAME : FACTORS AND MULTIPLES

SUB-TOPIC : RELATION BETWEEN H.C.F. , L.C.M. AND

NUMBERS, EXERCISE 8 D Q.NO. 2 AND 3

CHANGING YOUR TOMORROW

LEARNING OBJECTIVE :

Enable the students

- To Understand the concept of H.C.F. and L.C.M.

- To understand the relation between H.C.F. and L.C.M.

EXAMPLE – 2
Find the smallest number of 4 digits which when divided by 6, 8, 12 and 20 leaves no remainder

➤ **According to the question we have to find the smallest number which can be divided by each of the given numbers.**

➤ **So we find the L.C.M.**

2	6 , 8 , 12, 20
2	3 , 4 , 6 , 10
3	3 , 2 , 3 , 5
2	1 , 2 , 1 , 5
5	1 , 1 , 1 , 5
	1, 1, 1, 1

L.C.M.= 2×2×3×2×5 = 120

Relation between H.C.F. , L.C.M. and the numbers.

➢ **We have to find 4 digit number, and which is the smallest multiple of 120.**

➢ **The smallest 4 digit number= 1000**

➢ **Let's check whether 120 divides 1000 exactly.**

$$
\begin{array}{r}
8 \\
120\ \overline{\big|\ 1000} \\
960 \\
\hline
40
\end{array}
$$

➢ **So the 8th multiple of 120 is a 3 digit number. [960]**

➢ **We'll take the 9th multiple of 120. which is 120×9 = 1080**

Ans: So the smallest 4 digit number divisible by 6, 8, 12 and 20 is 1080

EXAMPLE – 3
Find the greatest number of 4 digits which when divided by 7, 10, 15, 21 and 28 leaves no remainder

We find the **L.C.M.**

2	7 , 10 , 15, 21 , 28
7	7 , 5 , 15 , 21 , 14
3	1 , 5 , 15 , 3 , 2
2	1 , 5 , 5 , 1 , 2
5	1 , 5 , 5 , 1 , 1
	1, 1, 1, 1 , 1

L.C.M.= 2×7×3×2×5 = 420

Relation between H.C.F. , L.C.M. and the numbers.

➢ **The greatest 4 digit number= 9999**

➢ **Let's check whether 420 divides 9999 exactly.**

```
           23
      ┌─────────
420 │ 9999
    +  840
      ─────────
       1599
    ─  1260
      ─────────
        339
```

The remainder is 339 .

➢ **Subtract 339 from 9999 .**
➢ **[9999 – 339= 9660] which is divisible by 420.**

Ans: So the greatest 4 digit number divisible by 7, 10, 15, 21 and 28 is 9660

2. The L.C.M. and H.C.F. of two numbers are 720 and 5 respectively. If one of the two numbers is 45, find the other number.

Solution:

$$\frac{\text{L.C.M.} \times \text{H.C.F}}{\text{One number}} = \text{The other number}$$

$$\Rightarrow \text{the other number} = \frac{\overset{80}{\cancel{720}} \times 5}{\underset{9}{\cancel{45}}} = \text{ 80 Ans.}$$

3. The L.C.M. of 576 and 128 is 1152. Find the H.C.F.

Solution:

H.C.F. of two numbers = $\dfrac{\text{Their product}}{\text{Their L.C.M.}}$

Their product = 567 × 128 = 73728

H.C.F. of two numbers = $\dfrac{73728}{1152}$ = **64 Ans.**

ROUGH

```
      5  7  6
   ×  1  2  8
   _____
      4 6 0 8
    1 1 5 2 0
    5 7 6 0 0
   _____
    7 3 7 2 8
```

THANKING YOU
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