

CLASS: 5

SUBJECT: MATHEMATICS (assignment 15)

Please solve these sums in the math's copy (no need of copying the explanation)

Relationship between H.C.F. and L.C.M.

We will learn the relationship between H.C.F. and L.C.M. of two numbers.

First we need to find the highest common factor (H.C.F.) of 15 and 18 which is 3.

Then we need to find the lowest common multiple (L.C.M.) of 15 and 18 which is 90.

$$\text{H.C.F.} \times \text{L.C.M.} = 3 \times 90 = 270$$

$$\text{Also } 15 \times 18 = 270$$

Therefore, product of H.C.F. and L.C.M. of 15 and 18 = product of 15 and 18.

So, from the above explanation we conclude that the product of highest common factor (H.C.F.) and lowest common multiple (L.C.M.) of two numbers is equal to the product of two numbers

The Product of two numbers = The product of H.C.F X L.C.M

Or, $\text{H.C.F.} \times \text{L.C.M.} = \text{First number} \times \text{Second number}$

Example 1:

E.g. 1) Highest common factor and lowest common multiple of two numbers are 18 and 1782 respectively. One number is 162, find the other.

We know, $\text{H.C.F.} \times \text{L.C.M.} = \text{First number} \times \text{Second number}$ then we get,

$$18 \times 1782 = 162 \times \text{Second number}$$

$$18 \times 1782/162 = \text{Second number}$$

Therefore, the second number = 198

Example 2:

E.g. 2) If one number is 18 and the other is 15, HCF the numbers is 3, Find the LCM?

$\text{HCF} \times \text{LCM} = \text{First number} \times \text{Second number}$

$$3 \times \text{LCM} = 18 \times 15$$

$$\text{LCM} = 18 \times 15 / 3$$

$$\text{LCM} = 90$$

Solve the following questions:

Answers for the following problems are given below.

1. The product of two numbers is 120. If their H.C.F. is 6 what is their L.C.M.
2. The HCF and LCM of two numbers is 6 and 864 respectively if one number is 96 find the other number?
3. The LCM and product of two numbers is 72 and 864 respectively. Find their HCF.
4. The LCM of two numbers is 420 and their HCF is 20, if one of the numbers is 40, find the other number?
5. The HCF of two numbers is 18 and their LCM is 108, if one of the numbers is 54, what is the other number?

ANSWERS

1. 20

2. 54

3. 12

4. 210

5. 36