VIDYA BHAWAN, BALIKA VIDYAPITH
Shakti Utthan Ashram, Lakhisarai-811311(Bihar)
(Affiliated to CBSE up to +2 Level)

CLASS: X   SUBJECT : MATHEMATICS   DATE: 14. 04.2021

....

Question 4: Given that HCF (306, 657) = 9, find LCM (306, 657).

Solution: Given that HCF (306, 657) = 9

We know that LCM x HCF = Product of two numbers

$$\text{So,} \quad \text{LCM}(306, 657) = \frac{306 \times 657}{\text{HCF}(306, 657)} = \frac{306 \times 657}{9} = 22338$$

Question 5: Check whether 6^n can end with the digit 0 for any natural number n.

Solution: Since prime factorisation of 6^n is given by $6^n = (2 \times 3)^n = 2^n \times 3^n$

Prime factorisation of 6^n contains only prime numbers 2 and 3.

6^n may end with the digit 0 for some 'n' if 5 must be in its prime factorisation which is not present.

So, there is no natural number VT for which 6^n ends with the digit zero.

Alternatively:

6^n will end with 0 if 5 is one of the primes of 6.

Prime factors of 6 = 2 and 3.

Since 5 is not a prime factor of 6,

therefore, 6^n cannot end with the digit 0.

Question 6: Explain why 7 × 11 × 13 + 13 and 7 × 6 × 5 × 4 × 3 × 2 × 1 + 5 are composite numbers.

Solution:

7 x 11 x 13 + 13 = 13 x (7 x 11 + 1) = 13 x 78

The given number has more than two factors.

Hence, it is a composite number.

7 x 6 x 5 x 4 x 3 x 2 x 1+5

= 5 x (7 x 6 x 4 x 3 x 2 x 1 + 1)

= 5 x 1009 x 1

The given number has more than two factors.

Hence, it is a composite number.

Question 7: There is a circular path around a sports field. Sonia takes 18 minutes to drive one round of the field, while Ravi takes 12 minutes for the same. Suppose they both start at the same point and at the same time, and go in the same direction. After how many minutes will they meet again at the starting point?
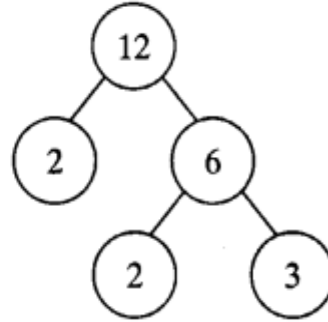
Solution: By taking LCM of time taken (in minutes) by Sonia and Ravi, we can get the actual number of minutes after which they meet again at the starting point after both start at same

point and of the same time, and go in the same direction.
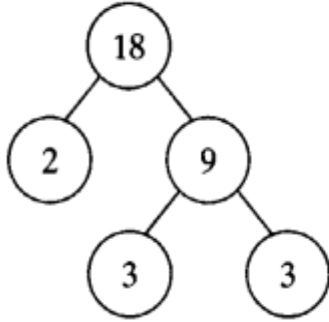
So, $18 = 2 \times 3^2$

$12 = 2^2 \times 3$

LCM $(18, 12) = 2^2 \times 3^2 = 36$

Therefore, both Sonia and Ravi will meet again at the starting point after 36 minutes.

Do Your Self
Revise Ex 1.2