Fundamental Theorem of Arithmetic

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In the previous segment, we saw the **HCF and LCM of 3 numbers.** In this segment, we will see the Fundamental Theorem of Arithmetic.

What is the Fundamental theorem of arithmetic?

Every composite number can be expressed as a product of prime numbers, and this factorization is unique, ignoring the order in which the prime factors occur. This is also known as the **Unique Prime Factorisation Theorem**.

For example,

Q. Find the prime factors of 30 and 525.

Solution:

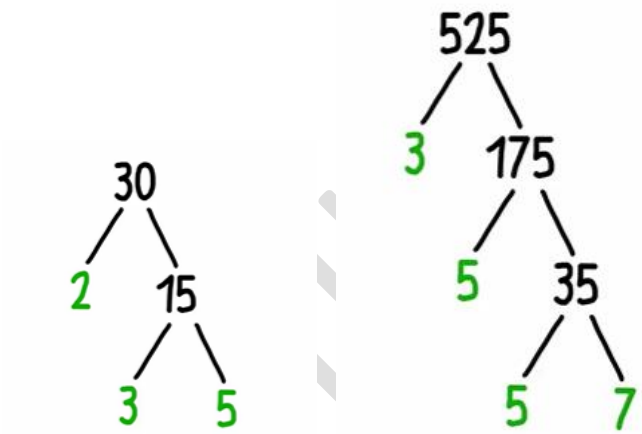

Fig 1

Thus, 30 = 2 x 3 x 5 and 525 = 3 x 5 x 5 x 7.

If observed then 30 can be only expressed as '2 x 3 x 5' and 525 can be only expressed as '3 x 5 x 5 x 7'.

Summary

Fundamental Theorem of Arithmetic	Every composite number can be expressed as a product of prime numbers, and this factorization is unique, ignoring the order in which the prime factors occur. This is also known as the **Unique Prime Factorisation Theorem**.

What's next?

In our next segment of Class 10 Maths, we will learn about **Irrational Numbers**.