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CLASS : X

SUBJECT : MATHEMATICS

DATE: 08.04.2021

Real Numbers Class 10 Notes: Chapter 1

CBSE Real Numbers Class 10 Notes:-

Real numbers for class 10 notes are given here in detail. Go through the below article to learn the real number concept in an easy way.

Introduction to Real Numbers

Real Numbers

- Real numbers constitute the union of all rational and irrational numbers.
- Any real number can be plotted on the number line.

Euclid's Division Lemma

- Euclid's Division Lemma states that given two integers a and b , there exists a unique pair of integers q and r such that $a=b \times q+r$ and $0 \leq r < b$.
- This lemma is essentially equivalent to : $dividend = divisor \times quotient + remainder$
- In other words, for a given pair of dividend and divisor, the quotient and remainder obtained are going to be unique.

Euclid's Division Algorithm

- Euclid's Division Algorithm is a method used to find the **H.C.F** of two numbers, say a and b where $a > b$.
- We apply Euclid's Division Lemma to find two integers q and r such that $a=b \times q+r$ and $0 \leq r < b$.
- If $r = 0$, the H.C.F is b , else, we apply Euclid's division Lemma to b (the divisor) and r (the remainder) to get another pair of quotient and remainder.
- The above method is repeated until a remainder of zero is obtained. The divisor in that step is the H.C.F of the given set of numbers.

The Fundamental Theorem of Arithmetic

Prime Factorisation

- Prime Factorisation is the method of expressing a natural number as a product of prime numbers.
- Example: $36=2 \times 2 \times 3 \times 3$ is the prime factorisation of 36.

Fundamental Theorem of Arithmetic

- The Fundamental Theorem of Arithmetic states that the prime factorisation for a given number is unique if the arrangement of the prime factors is ignored.
- Example: $36=2 \times 2 \times 3 \times 3$ OR, $36=2 \times 3 \times 2 \times 3$
- Therefore, 36 is represented as a product of prime factors (Two 2s and two 3s) ignoring the arrangement of the factors.

Method of Finding LCM

Example: To find the Least Common Multiple (**L.C.M**) of 36 and 56,

1. $36=2 \times 2 \times 3 \times 3$
 $56=2 \times 2 \times 2 \times 7$
2. The common prime factors are 2×2
3. The uncommon prime factors are 3×3 for 36 and 2×7 for 56.
4. LCM of 36 and 56 = $2 \times 2 \times 3 \times 3 \times 2 \times 7$ which is 504.