CLASS 10 MATHS – CHAPTER 1

REAL NUMBERS – ALL FORMULAE

Basic Terms

Real Numbers: all numbers that can be represented on a number line.

Rational Numbers: that can be written in the form p/q, where.

Irrational Numbers: that cannot be written in the form p/q.

Coprime Numbers: Two numbers whose HCF is 1.

Euclid's Division Lemma

It states that for any two integers **a and b (b ≠ 0)**:

$$a = bq + r$$

Where:
a = dividend
b = divisor
q = quotient
r = remainder
Condition: **0 ≤ r < b**

HCF & LCM

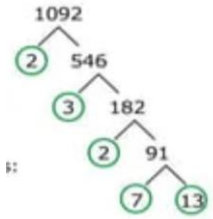
- HCF → highest common factor
- LCM → least common multiple
- Use prime factorisation
- HCF → smallest powers
- LCM → highest powers
- Relation: HCF × LCM = product
- Used in word problems
- Important exam topic

Prime Factorisation

- Express number as primes
- Example: $60 = 2^2 \times 3 \times 5$
- Based on theorem
- Unique factorisation
- Used in HCF & LCM
- Helps simplify problems
- Only prime numbers used
- Important concept

Fundamental Theorem Of Arithmetic

Every composite number can be written as a product of prime numbers, and this factorisation is unique



Decimal Expansion

Terminating Decimal:

Decimal ends after finite digits
Example: 0.25, 1.5

Non-Terminating Decimal:

Decimal does not end

- Recurring : 0.333...
- Non-recurring: π