Test for Divisibility of Numbers

Divisibility Test:

A divisibility test is a simple rule to check whether a number is divisible by another number without performing actual division.

These rules help in quick calculations and prime factorization.

1. Divisibility Rules for Numbers

Number	Divisibility Rule	Example
1	A number is divisible by 2 if its last digit is 0, 2, 4, 6, or 8.	248 (last digit is 8, so divisible
2	A number is divisible by 3 if the sum of its digits is divisible by 3.	273 → 2 + 7 + 3 = 12 (divisible by 3)
3	A number is divisible by 4 if the last two digits form a number divisible by 4	316 → 16 is divisible by 4
4	A number is divisible by 5 if it ends in 0 or 5.	250, 375 (both end in 0 or 5)
5	A number is divisible by 6 if it is divisible by both 2 and 3.	144 → divisible by 2 (last digit 4) and 3 (sum 9)
6	A number is divisible by 8 if the last three digits form a number divisible by 8.	7,352 → 352 ÷ 8 = 44 (divisible)
7	A number is divisible by 9 if the sum of its digits is divisible by 9	6,561 → 6 + 5 + 6 + 1 = 18 (divisible by 9)
8	A number is divisible by 10 if it ends in 0	420, 3500 (both end in 0)
9	A number is divisible by 11 if the difference between the sum of digits at odd and even places is 0 or a multiple of 11.	3,652 → (3 + 5) (6 + 2) = 8 − 8 = 0 (divisible)

2. Properties of Divisibility Tests

i.   Helps in quick calculations without performing division.

ii. Useful for finding factors, LCM, and HCF.

iii. Essential for simplifying fractions.

iv. Used in number patterns and divisibility puzzles.