Subtraction of Integers

1. Subtraction of Integers

Subtraction of integers means finding the difference between two integers.

To subtract integers, we change the subtraction into addition and change the sign of the second number.

Rule:

a − b = a + (−b)

Examples:

- 5 − 3 = 2 (Simple subtraction)
- 5 − (−2) = 5 + 2 = 7
- (−4) − (+3) = −4 + (−3) = −7
- (−6) − (−2) = −6 + 2 = −4

2. Steps to Subtract Integers

i. Change the subtraction sign to addition

ii. Change the sign of the second number

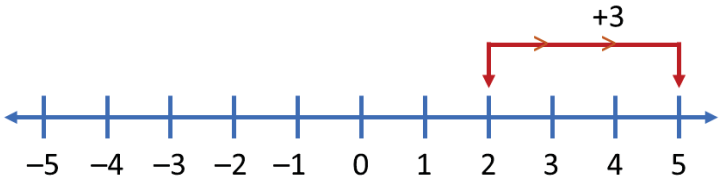
iii. Add the integers using the rules of addition

3. Using Number Line

- Start at the first number
- If subtracting a positive number, move to the left
- If subtracting a negative number, move to the right

Example:

2 − (−3): Start at 2, move 3 steps right → at 5



4. Properties of Subtraction of Integers

i. Subtraction is not commutative

$a - b \neq b - a$

Example: $5 - 3 \neq 3 - 5$

ii. Subtracting a number is same as adding its opposite

$a - b = a + (-b)$

iii. Subtracting zero does not change the number

$a - 0 = a$

iv. Subtracting a number from itself gives zero

$a - a = 0$

5. Summary

- Subtracting integers = Add the opposite
- **Rule:** $a - b = a + (-b)$
- Use number line to visualize
- **Properties:** Not commutative, $a - 0 = a$, $a - a = 0$

Example: $(-2) - (-5) = (-2) + 5 = 3$