Addition and Subtraction of Integers

Adding integers is the process of finding the sum of two or more integers.

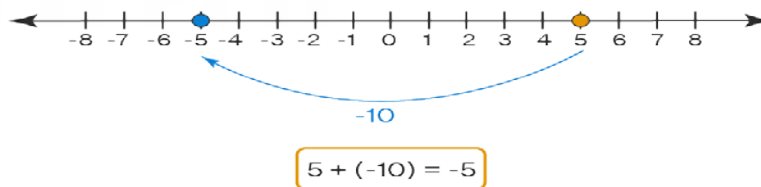➡️ **Adding Integers on a Number Line**

The addition of integers on a number line is based on the given principles:

- ❖ Adding a positive number is done by moving towards the right side (or the positive side) of the number line.

- ❖ Adding a negative integer is done by moving towards the left side (or the negative side) of the number line.

- ❖ Any one of the given integers is taken as the base point from where we start moving on the number line.

Let us understand with an example:

Example: Use the number line and add the following integers: 5 + (-10)

Solution: Since we need to add a negative number (-10), we will move towards the left on the number line. Starting from 5, we will take 10 steps towards the left which will bring us to -5.

$$5 + (-10) = -5$$

Addition and Subtraction of Integer

⇨ Rules of addition of Integers

Rule 1: To add two integers of like signs, add their values regardless of their signs and give the sum their common sign.
For Example: (i) 28 + 35 = 63   (ii) (-15) + (-19) = -(15 + 19) = -34

Rule 2: To add two integers of unlike signs, find the difference between their numerical values regardless of their signs and give the sign of the greater integer to this difference.
For Example: (i) -35 + 12 = -23 (ii) 68 + (-37) = 31

Subtraction of Integer

The method of finding the difference between two integers is known as subtracting integers. Depending on whether the numbers are positive, negative, or a mix, the value may increase or decrease.
Let us understand with some examples:
Example: Subtract the following:

(i) 15 from 7   (ii) -7 from 3   (iii) 3 from -7

Solution: (i) 7 – 15 = 7 +(additive inverse of 15) = 7 + (-15) = -8

(ii) 3 – (- 7) = 3 + (additive inverse of -7) = 3 + 7 = 10

(iii) – 7 – 3 = (-7) + (additive inverse of 3) = (- 7) + (- 3) = -10