

Grade 7 –Mathematics (English Medium)

Unit 8

Directed Numbers

Lesson 01

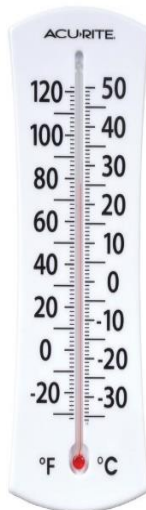
Identifying Directed Numbers.

All the numbers that are written with a positive or negative sign to indicate not only their magnitude but also one of two directions which are opposite to each other are called as **directed numbers**.

When sign is not written in front of a number, it is considered as a positive number.

Accordingly, numbers such as **+4, -3, +8.7, -1/2, +5/7, -4.6, ...** are directed numbers.

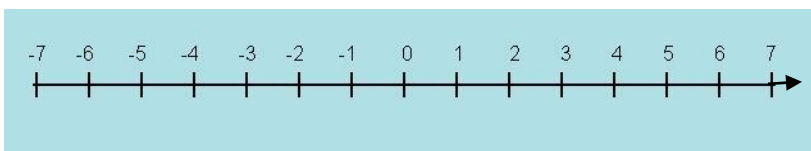
The instances where we use directed numbers.



When using a thermometer



When using a Galvanometer



When using a number line.

Integers

The positive whole numbers marked to the right of the position indicating zero on the number line are defined as **positive integers** and the negative whole numbers marked to the left of the position indicating zero are defined as **negative integers**.

Set of integers = $\{\dots, -4, -3, -2, -1, 0, 1, 2, 3, 4 \dots\}$

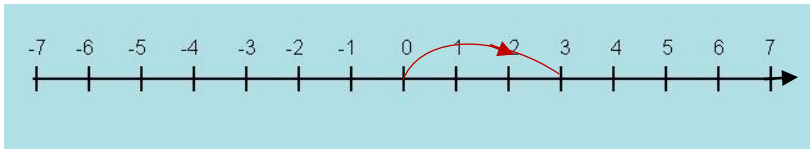
Positive integers = $\{1, 2, 3, 4, 5, 6, 7, \dots\}$

Negative integers = $\{-1, -2, -3, -4, -5, -6, -7\dots\}$

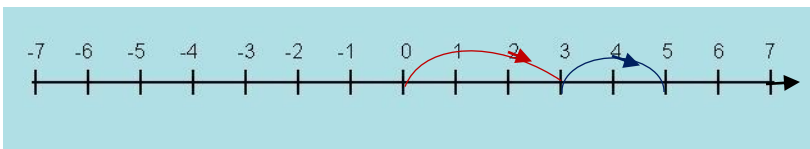
Addition of directed numbers which are integers by using the number line.

➤ The sum of two positive integers.

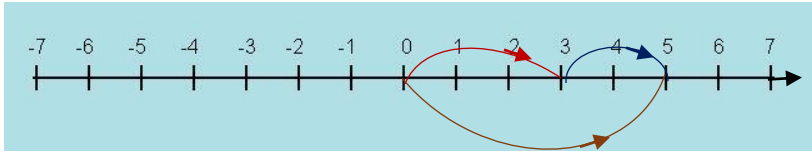
- **(+3) + (+2)**
- First, starting from 0, go three units to the right along the number line.



- Next, from this point go two units towards the right along the number line.



- The directed number denoted by the position at which we finally stop is the answer.



$$\underline{(+3) + (+2) = (+5)}$$

Exercise

Find each of the following sums using the number line.

- $(+7) + (+2)$
- $(+6) + (+3)$
- $(+3) + (+3)$
- $(+4) + (+9)$

Assignment

Suggest a method to obtain the sum of two positive numbers without using a number line.

Home work

Do the exercise 8.1