

## Types of Integers

There are two types of integers:  
Positive integers and negative integers.

### Positive Integers

All the numbers lying on the right side of 0 on a number line are called positive integers.

**Example :** 1, 2, 3, 4, ...

Positive integers are denoted by  $Z^+$ .

### Negative Integers

All the numbers lying on the left side of zero on a number line are called negative integers.

**Example :** -1, -2, -3, -4, ...

Negative integers are denoted by  $Z^-$ .

**NOTE** Positive and negative numbers taken together are known as directed numbers.

Some examples of positive and negative numbers are:

	Positive Numbers	Negative Numbers
(i)	Profit (+)	Loss (-)
(ii)	Up (+)	Down (-)
(iii)	Temperature above $0^{\circ}\text{C}$ (+)	Temperature below $0^{\circ}\text{C}$ (-)
(iv)	Increase (+)	Decrease (-)
(v)	Deposit (+)	Withdraw (-)
(vi)	Climbing up (+)	Step down (-)
(vii)	Earning (+)	Spending (-)

## Negative of a Negative Integer

Negative of a negative integer is positive.

**Example :**  $-(-1) = +1$

$$-(-2) = +2$$

But negative of a positive integer is negative.

**Example :**  $-(+1) = -1$

$$-(+2) = -2$$

## Chapter - 6

## Negative number and Integers

Ex. 6.1.

Q1. Write opposite of the following :-

- (a) Increase in weight  $\rightarrow$  Decrease in weight  
 (b) 30 km north  $\rightarrow$  30 km south.  
 (c) 80 m east  $\rightarrow$  80 m west  
 (d) Loss of ₹ 700  $\rightarrow$  Profit / Gain of ₹ 700  
 (e) 100 m above sea level  $\rightarrow$  100 m below sea level

Q2. Represent the following numbers as integers with appropriate signs.

- (a) An aeroplane is flying at a height two thousand meters above the ground.

Sol. +2000m.

- (b) A submarine is moving at a depth eight hundred meters below the sea level.

Sol. -800m.

- (c) A deposit of rupees two hundred

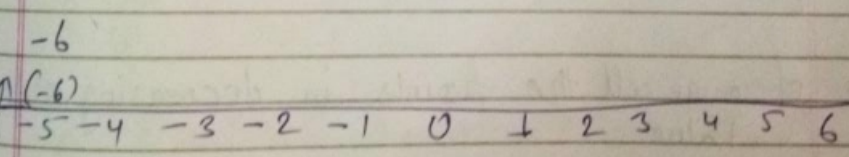
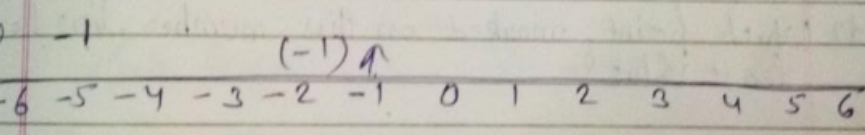
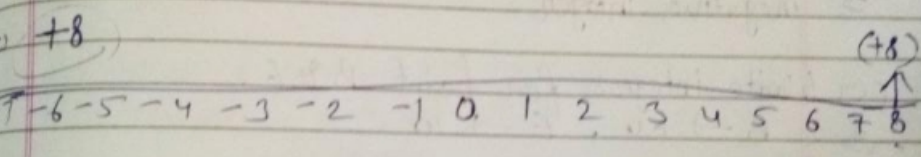
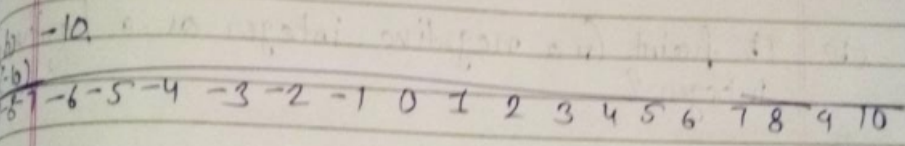
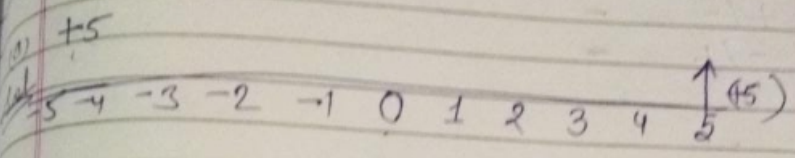
Sol. + ₹ 200

- (d) Withdrawal of rupees seven hundred.

Sol. - ₹ 700.

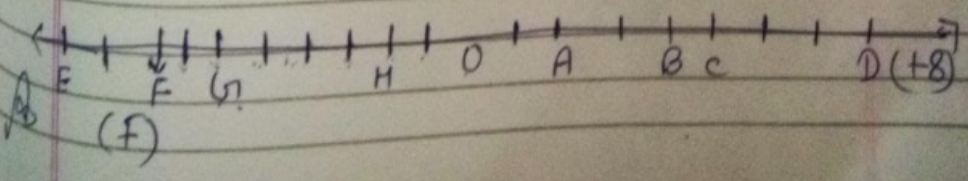


Q3. Represent the following numbers on a number line:-



Q4. Adjacent fig. is a vertical numberline, representing integers. Observe it and locate the following points:-

(a) If point D is +8 then which point is -8?



(b) Is point G a negative integer or a positive integer?

↳ negative integer

(c) Write integers for point B & E.

↳  $B \rightarrow +4$ ,  $E \rightarrow 10$

(d) Which point marked on this number line has the least value?

↳ E

(e) Arrange all the points in decreasing order of value.

↳ D, C, B, A, O, H, G, F, E

Ex 6.1 Class 6 Maths Question 5.

Following is the list of temperatures of five places in India on a particular day of the year.

<b>Place</b>	<b>Temperature</b>	
Siachin	10°C below 0°C	.....
Shimla	2°C below 0°C	.....
Ahmedabad	30°C above 0°C	.....
Delhi	20°C above 0°C	.....
Srinagar	5°C below 0°C	.....

(a) Write the temperatures of these places in the form of integers in the blank column.

(b) Following is the number line representing the temperature in degree Celsius.



Plot the name of the city against its temperature.

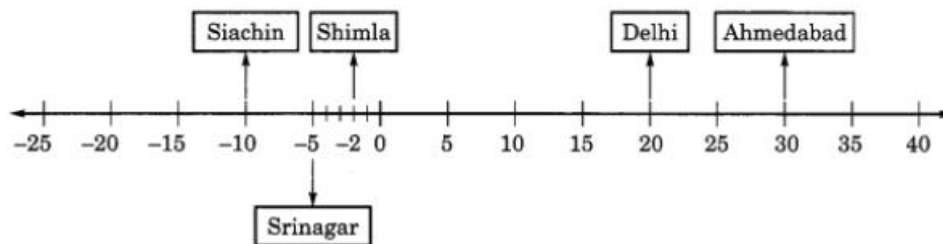
(c) Which is the coolest place?

(d) Write the names of the places where temperatures are above 10°C.

Solution:

(a) Place	Temperature	In the form of integers
Siachin	10°C below 0°C	- 10°
Shimla	2°C below 0°C	- 2°C
Ahmedabad	30°C above 0°C	+ 30°C
Delhi	20°C above 0°C	+ 20°C
Srinagar	5°C below 0°C	- 5°C

(b)



(c) Siachin is the coolest place with  $-10^{\circ}\text{C}$  temperature.

(d) (i) Delhi  $\rightarrow 20^{\circ}\text{C}$

(ii) Ahmedabad  $\rightarrow 30^{\circ}\text{C}$



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Ex. 6.1

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Q6. In each of the following pairs, which no. is to the right of the other on the numberline?

(a) 2, 9  
Sol. 9 lies to the right on the number line ( $9 > 2$ )

(b) -3, -8  
Sol. -3 lies to the right on the number line ( $-3 > -8$ )

(c) 0, -1  
Sol. 0 lies to the right on the number line ( $0 > -1$ )

(d) -11, 10  
Sol. 10 lies to the right on the number line ( $10 > -11$ )

(e) -6, 6  
Sol. 6 lies to the right on the number line ( $6 > -6$ )

(f) 1, -100  
Sol. 1 lies to the right on the number line ( $1 > -100$ )

Q7. Write all the integers between the given pairs (write them in the increasing order.)

(a) 0 and -7

Sol. -6, -5, -4, -3, -2, -1

(b) -4 and 4

Sol. -3, -2, -1, 0, 1, 2, 3

Q1) -8 and -15  
Sol. -14, -13, -12, -11, -10, -9,

Q2) -30 and -23  
Sol. -29, -28, -27, -26, -25, -24

Q3) (a) Write four negative integers greater than -20.  
Sol. -19, -18, -17, -16

Q4) Write four negative integers less than -10.  
Sol. -11, -12, -13, -14

Q5) For the following statement write True and False.  
If the statement is false, correct the statement.

(a) -8 is to the right of -10 on a number line.  
A True as  $(-8 > -10)$

(b) -100 is to the right of -50 on a number line.  
False. (-50 is greater than -100)  
So -100 lies to the left of -50 on the number line.

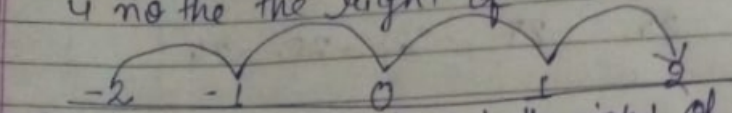
(c) Smallest negative integer is -1.  
Sol. False -1 is the greater negative integers.

(d) -26 is the greater than -25.  
Sol. False -26 is smallest than -25.

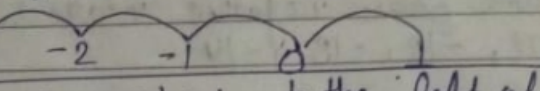


Q 10. Draw a number line and answer the following:-

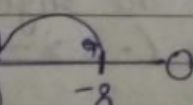
(a) Which number will we reach if we move 4 no to the right of  $-2$ .

Sol.  If we move 4 numbers to the right of  $-2$  we will reach at 2.

(b) Which number will we reach if we move 5 numbers to the left of 1.

Sol.  If we move 5 numbers to the left of 1 we will reach at  $-4$ .

(c) If we are at  $-8$  on the number line, in which direction should we move to reach  $-13$ ?

Sol.  left direction.

(d) If we are at  $-6$  on the number line, in which direction should we move to reach  $-1$ ?

Sol.  right direction.

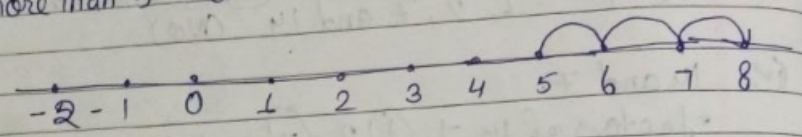
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Ex - 6.2

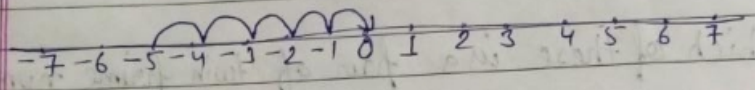
Q1. Using the number line write the integer which is:-

(a) 3 more than 5 = 8

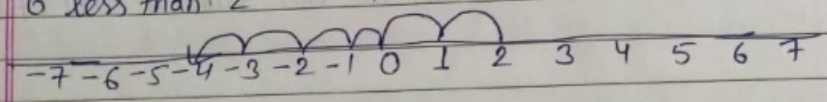
Sol.



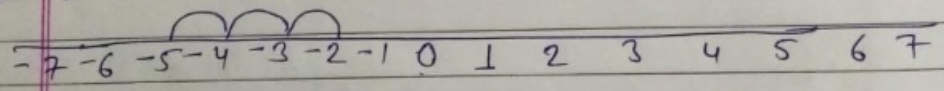
(b) 5 more than -5 = 0



(c) 6 less than 2 = -4

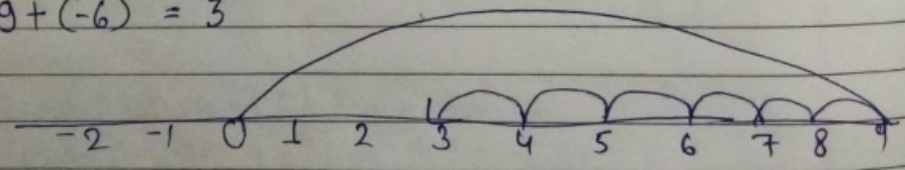


(d) 3 less than -2 = -5

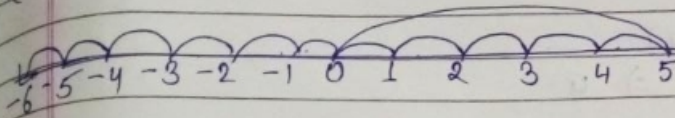


Q2. Use number line and add the following integers.

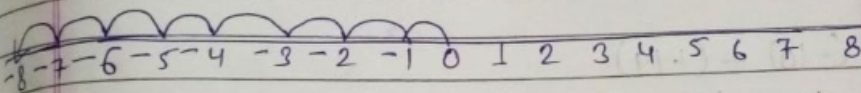
(a)  $9 + (-6) = 3$



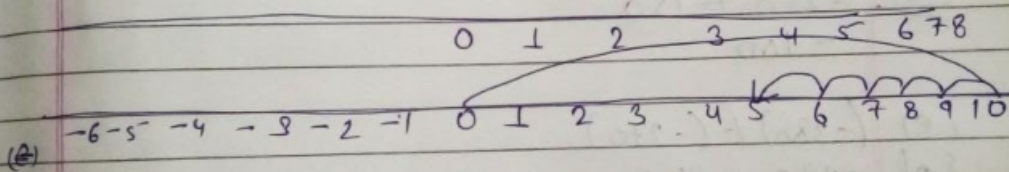
$$(b) 5 + (-11) = -6$$



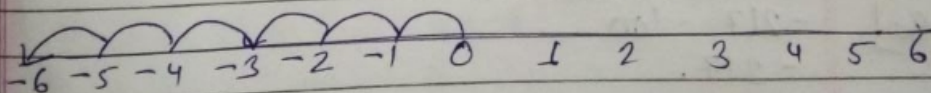
$$(c) (-1) + (-7) = -8$$



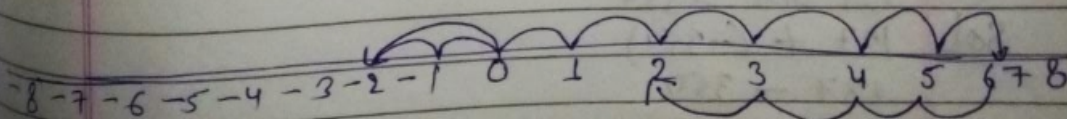
$$(d) (-5) + 10 = 5$$



$$(e) (-1) + (-2) + (-3) = -6$$



$$(f) (-2) + (8) + (-4) = 2$$





Q3. Add without using number line: -

(a)  $11 + (-7)$   
Sol.  $\Rightarrow 11 - 7 \Rightarrow 4$

(b)  $(-13) + (+18)$   
Sol.  $-13 + 18 \Rightarrow +5$

(c)  $(-10) + (+19)$   
Sol.  $-10 + 19 = 9$

(d)  $(-250) + (+150)$   
Sol.  $-250 + 150$   
 $- 100$

(e)  $(-380) + (-270)$   
Sol.  $-380 - 270$   
 $- 650$

(f)  $(-217) + (-100)$   
Sol.  $-217 - 100$   
 $- 317.$

Q4. Find the sum of :-

(a) 137 and -354  
Sol.  $137 + (-354)$   
 $137 - 354.$   
 $217.$

-52 and 52

$$-52 + 52 = 0$$

-213, 39 and 192

$$-213 + 39 + 192$$

$$-213 + 231$$

18

1) -50, -200 and 300

$$-50 - 200 + 300$$

$$-250 + 300$$

50.

Find the value of :-

$$1) (-7) + (-9) + 4 + 16$$

$$= -7 - 9 + 4 + 16$$

$$-16 + 20$$

4

$$2) 37 + (-2) + (-65) + (-8)$$

$$= 37 - 2 - 65 - 8$$

$$37 - 75$$

-38

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Ex 6.3

Q1 Subtract:-

$$(a) 35 - (20)$$
$$\Rightarrow 35 - 20 \Rightarrow 15$$

$$(b) 72 - 90$$
$$\Rightarrow 72 - 90 = -18$$

$$(c) (-15) - (-18)$$
$$\Rightarrow -15 + 18$$
$$\Rightarrow 3$$

$$(d) (-20) - (13)$$
$$\Rightarrow -20 - 13$$
$$\Rightarrow -33$$

$$(e) 23 - (-12)$$
$$\Rightarrow 23 + 12$$
$$35$$

$$(f) (-32) - (-40)$$
$$\Rightarrow -32 + 40$$
$$\Rightarrow 8$$



Q2. Fill in the blanks with  $>$ ,  $<$  or  $=$  sign.

$$(a) \quad (-3) + (-6) \quad < \quad (-3) - (-6)$$

Sol.  $-3 - 6$   $-3 + 6$   
 $= -9$   $+3$

$$(b) \quad (-21) - (-10) \quad > \quad (-31) + (-11)$$

Sol.  $-21 + 10$   $-31 - 11$   
 $-11$   $-42$

$$(c) \quad 45 - (-11) \quad > \quad 57 + (-4)$$

Sol.  $45 + 11$   $57 - 4$   
 $56$   $53$

$$(d) \quad (-25) - (-42) \quad > \quad (-42) - (-25)$$

$-25 + 42$   $-42 + 25$   
 $17$   $-17$

Saved

Q3. Fill in the blanks:-

$$(a) (-8) + \underline{8} = 0$$

$$(b) 13 + \underline{(-13)} = 0$$

$$(c) 12 + \underline{(-12)} = 0$$

$$(d) (-4) + (-8) = \underline{-12}$$

$$(e) \underline{+15} - 15 = -10$$

Q4. Find

$$(a) (-7) - 8 - (-25)$$

$$\text{Sol. } \Rightarrow -7 - 8 + 25$$

$$\Rightarrow -15 + 25 \Rightarrow 10$$

$$(b) (-13) + 32 - 8 - 1$$

$$\text{Sol. } -13 + 32 - 9$$

$$32 - 22 = 10$$

$$(c) (-7) + (-8) + (-90)$$

$$\text{Sol. } -7 - 8 - 90$$

$$-105$$

$$(d) 50 - (-40) - (-2)$$

$$\text{Sol. } 50 + 40 + 2$$

$$92$$