

Name : _____

Grade : VI

Subject : Mathematics

Chapter: 6. Integers

Objective Type Questions

I. Multiple choice questions

- Every integers less than 0 has the sign
 - +
 -
 - x
 - +
- The integer '5 units to the right of 0 on the number line' is
 - +5
 - 5
 - +4
 - 4
- The processor of the integer -1 is
 - 0
 - 2
 - 2
 - 1
- The predecessor of the integer -1 is
 - 0
 - 1
 - 3
 - 2
- Number of whole numbers lying between -7 and 6 is
 - 2
 - 4
 - 5
 - 6
- The least integer lying between -10 and -16 is
 - 13
 - 12
 - 15
 - 11
- Amulya and Amar visited two places A and B, respectively in Kashmir and recorded the minimum temperatures on a particular day as -4°C at A and -1°C at B. Which of the following statements is true?
 - A is cooler than B
 - B is cooler than A
 - There is a difference of 2°C in the temperature
 - The temperature at A is 4°C higher than that at B
- When a negative integer is subtracted from another negative integer, the sign of the result
 - Is always negative
 - is always positive
 - is never negative
 - depends on the numerical value of the integers

9. Which of the following shows the maximum rise in temperature?
 a. 0°C to 10°C b. -4°C to 8°C c. -15°C to -8°C d. -7°C to 0°C
10. The successor of the predecessor of -20 is
 a. -20 b. -10 c. -19 d. -21
11. The additive inverse of a negative integer
 a. Is always negative b. is always positive
 c. Is the same integer d. Zero

1. -	2. +5	3. -2	4. 3	5. 6	6. -15
7. B	8. depends on the numerical value of the integers	9. -4°C to 8°C	10. -20	11. is always positive	

II. Multiple choice questions

1. Number of whole numbers lying between -5 and 5
 a. 10 b. 3 c. 4 d. 5
2. The greatest integer lying between -10 and -15 is
 a. -10 b. -11 c. -15 d. -14
3. The integer with negative (-) is always less
 a. 0 b. -3 c. -1 d. -2
4. An integer with positive sign (+) is always greater than:
 a. 0 b. 1 c. 2 d. 3
5. The successor of the predecessor of -50 is
 a. -48 b. -49 c. -50 d. -51
6. Which of the following is the simplest form of $(-8) + (-7) - (-2)$?
 a. -17 b. 13 c. -13 d. 17
7. What is the value of $50 - (-40) - (2)$?
 a. -12 b. 8 c. 92 d. 88
8. Which of the following lies to the left of -24?
 a. -23 b. 25 c. -25 d. 23
9. Which of the following numbers do you get if you subtract -40 from -50
 a. 10 b. -10 c. -90 d. 90
10. Which of the following numbers is '2' less than four times of '5'?
 a. 18 b. -18 c. 3 d. 13

11. 4 more than -5 is:
 a. 4 b. -9 c. -1 d. 1
12. 2 less than -7 is
 a. -9 b. -5 c. 5 d. none of these
13. $7 + [-3] = ?$
 a. 4 b. 10 c. -10 d. none of these
14. $(-42) + (-35) = ?$
 a. -7 b. 7 c. -77 d. none of these
15. $(-37) + 6 = ?$
 a. -43 b. -31 c. 31 d. none of these
16. $49 + (-27) = ?$
 a. -73 b. -31 c. 31 d. none of these
17. The successor of -18 is
 a. -19 b. 17 c. -17 d. 19
18. The predecessor of -16 is
 a. -15 b. -17 c. 15 d. 17
19. The additive inverse of -5 is
 a. 5 b. 0 c. -4 d. -6
20. $-12 - (-5) = ?$
 a. -17 b. -7 c. 7 d. none of these

1. d	2. b	3. a	4. a	5. c	6. c	7. d	8. c	9. b	10. a
11. c	12. a	13. b	14. c	15. b	16. d	17. c	18. b	19. a	20. b

III. Multiple choice questions

1. The succeeding number of the number 0 is
 a. -1 b. 0 c. 1 d. 11
2. The succeeding number of the whole number -1 is
 a. -1 b. 1 c. 0 d. -11
3. The succeeding number of the number -4 is
 a. -1 b. -2 c. -3 d. -4
4. The succeeding number of the number 9 is
 a. 9 b. 8 c. 10 d. 11
5. The preceding number of the number 1 is
 a. 1 b. -1 c. 2 d. 0

6. The preceding number of the number 0 is
a. 1 b. -1 c. 0 d. none of these
7. The preceding number of the number 2 is
a. 3 b. 1 c. 0 d. 4
8. The preceding number of the number 6 is
a. 2 b. 3 c. 4 d. 5
9. An integer between -3 and -1 is
a. -3 b. -1 c. -2 d. 0
10. Which of the following is true?
a. $0 < -8$ b. $0 > -8$ c. $4 < -4$ d. $0 > 6$.
11. Which of the following is false?
a. $-1 < -2$ b. $79 < 89$ c. $-1 < 1$ d. $1 > 0$
12. Which of the following statements is true?
a. Every positive integer is larger than every negative integer
b. Zero is greater than every positive negative integer
c. Zero is smaller than every negative integer.
d. Farther a number from zero to the right smaller is its value.
13. Which of the following statements is false?
a. Zero is neither a negative integer nor a positive integer
b. Zero is less than every negative integer.
c. Zero is larger than every negative integer
d. Farther a number from zero on the left. Larger is its value
14. Which of the following statements is true?
a. Greatest negative integer is -1
b. -10 is to the right of -8 on a number line
c. -50 is to the left of -100 on a number line.
d. -11 is larger than -10.
15. $(+1) + (+2) = ?$
16. $+1$ b. $+2$ c. $+3$ $(-1) + (-2) = ?$
a. -1 b. -2 c. -3 d. +3
17. $(-2) + (+3) = ?$
a. -2 b. +3 c. +1 d. -1
18. $(-4) + (+3) = ?$
a. -1 b. 1 c. 0 d. +2
19. $(-1) + (-1) = ?$
a. -1 b. -2 c. 2 d. 0

20. $(-1) + (+1) = ?$
 a. -1 b. +1 c. 0 d. none of these
21. $(-2) - (-1) = ?$
 a. -1 b. 1 c. 0 d. -2
22. $(-1) - (-2) = ?$
 a. -1 b. 1 c. 0 d. none of these
23. $(-1) + ? = 0$
 a. +1 b. -1 c. 0 d. none of these
24. $10 + ? = 0$
 a. -1 b. -10 c. 0 d. 1
25. $9 + (-9) = ?$
 a. 9 b. -9 c. 1 d. 0
26. $(-1) + ? = -2$
 a. 1 b. -1 c. 0 d. 2
27. $? - 5 = -5$
 a. 0 b. 5 c. -5 d. 1
28. $? - 4 = -2$
 a. 1 b. 2 c. 3 d. 4
29. $(-1) - 2 - (-3) =$
 a. 0 b. 1 c. 2 d. 3
30. $2 - (-1) - (-2)$
 a. 3 b. 4 c. 2 d. 5

1. c	2. c	3. c	4. c	5. d	6. b	7. b	8. d	9. c	10. b
11. a	12. a	13. d	14. a	15. c	16. c	17. c	18. a	19. b	20. c
21. a	22. b	23. a	24. b	25. d	26. b	27. a	28. b	29. a	30. d

IV. Multiple choice questions

1. Number of integers lying between -1 and 1 is
 a. 1 b. 2 c. 3 d. 0
2. The integer lying between -10 and -15 is
 a. -10 b. -11 c. -15 d. -14
3. Which of the following numbers lies on the right of -5 on a number line?
 a. -4 b. -6 c. -7 d. -8

4. On the number line, the integer 5 is located
 - a. To the left of 0
 - b. to the right of 0
 - c. to the left of 1
 - d. to the left of -2

5. In which of the following pairs of integers, the first integer is not on the left of the other integer on the number line?
 - a. (-1, 10)
 - b. (-3, -5)
 - c. (-5, -3)
 - d. (-6, 0)

6. The statement "When an integer is added to itself, the sum is greater than the integer" is
 - a. Always true
 - b. never true
 - c. true only when the integer is positive
 - d. true for non-negative integers

1. a	2. b	3. a	4. b	5. b	6. c
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I. Fill in the blanks

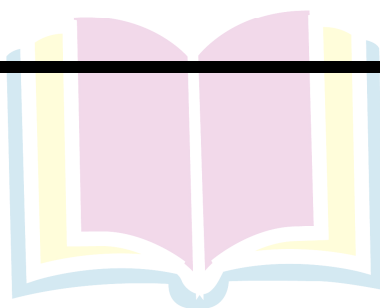
1. $(-11) + (-3) + (-1) = \underline{\hspace{2cm}}$.
2. $\underline{\hspace{2cm}} + (-11) + 100 = 200$
3. $(-90) + 0 + (-80) = \underline{\hspace{2cm}}$.
4. $\underline{\hspace{2cm}} - 3040 = -7910$
5. On the number line, -15 is to the $\underline{\hspace{1cm}}$ of zero.
6. On the number line, 10 is to the $\underline{\hspace{1cm}}$ of zero.
7. The additive inverse of 14 is $\underline{\hspace{2cm}}$.
8. The additive inverse of -1 is $\underline{\hspace{2cm}}$.
9. The additive inverse of 0 is $\underline{\hspace{2cm}}$.
10. The number of integers lying between -5 and 5 is $\underline{\hspace{2cm}}$.

1. -15	2. 111	3. -170	4. -4870	5. Left	6. Right	7. -14	8. 1	9. 0	10. 9
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II. Fill in the blanks

1. $(-11) + (-2) + (-1) =$ _____
2. _____ $+ (-11) + 111 = 130$
3. $(-80) + 0 + (-90) =$ _____.
4. _____ $- 3456 = - 8910$
5. The sum of an integer and its opposite is _____.
6. Father a number zero on the left is _____ its value.
7. Father a number from zero on the right is _____ its value.
8. _____ is an integer which is neither positive nor negative
9. If x and y are two integers, then $(x - y)$ is also an _____.
10. $a + 0 = a = 0 + a$, here 0 is called _____.
11. $(-11) + (-15)$ _____ $11 + 15$
12. $(-17) + (+9)$ _____ $(-81) + (-9)$
13. 0 _____ 1
14. -60 _____ 50
15. -10 _____ -11
16. -101 _____ -102
17. $(-2) + (-5) + (-6)$ _____ $(-3) + (-4) + (-6)$
18. 0 _____ -2
19. $1 + 2 + 3$ _____ $(-1) + (-2) + (-3)$

1. -14	2. 30	3. -170	4. -5454	5. zero	6. smaller	7. Larger
8. zero	9. integer	10. additive	11. <	12. >	13. <	14. <
15. >	16. <	17. =	18. >	19. >		



Next Generation School

I. Match the followings

a. The additive inverse of +2	i) 0
b. The greatest negative integer	ii) -2
c. The smallest positive integer	iii) 2
d. The smallest integer greater than every negative integer	iv) 1
e. Absolute value of sum of predecessor and successor of -1	v) -1

a. ii	b. v	c. iv	d. i	e. iii
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II. A. Match the followings

i) The additive inverse of + 2	a) 0
ii) The greatest negative integer	b) -2
iii) The greatest negative even integer	c) 2
iv) The smallest integer greater than every negative integer	d) 1
v) Sum of predecessor and successor of -1	e) -1

i) b	ii) e	iii) b	iv) a	v) b
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II. B. Match the followings

i) Absolute value of an integer a is denoted by	a) $-a$
ii) Multiplicative inverse of a non-zero integer a is	b) An integer
iii) Additive inverse of an integer a is	c) $[a]$
iv) Integer which is neither positive nor negative	d) $\frac{1}{a}$
v) Addition of integers is	e) Commutative
vi) Greatest negative integer is	f) Zero
vii) Difference of two integers is	g) -1

i) c	ii) d	iii) a	iv) f	v) e	vi) g	viii) b
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I. True or False

1. Every positive integer is greater than every negative integer.
2. The sum of any two negative integers is always greater than both the integers.
3. The sum of any two negative integers is always smaller than both the integers.
4. The sum of any two positive integers is greater than both the integers.
5. Since, $15 > 12$, therefore $-15 < -12$.
6. The sum of all the integers 19 to 18
7. The successor of the integer 19 is 18
8. All integers are whole numbers.
9. The predecessor of 0 is -1 .

10. The difference between an integer and its additive inverse is always even.
11. The sum of three different integers can never be zero.

1. True	2. False	3. True	4. True	5. True	6. True
7. False	8. False	9. True	10. True	11. False	

II. True or False

1. The smallest -3 .
2. Zero is less than every negative integer.
3. Zero is larger than every negative integer.
4. Zero is neither positive nor negative
5. On the number line, an integer on the right of a given integer is always large than the integer.
6. -2 is to the left of -5 on the number line.
7. The smallest integer is 0 .
8. 6 and -6 are at the same distance from 0 on the number line.
9. The sum of an integer and its additive inverse is always zero.
10. The sum of two negative integers is a positive integer.
11. Every negative integer is less than every natural number.
12. The additive inverse of zero is zero
13. Greatest negative integer is zero.
14. $-5 < -4 \therefore |-5| < |-4|$.
15. The sum of three different integers can never be negative.
16. Zero is not an integer
17. The successor of -25 is -24
18. The multiplicative inverse of 7 is -7 .

1. False	2. False	3. False	4. False	5. True	6. False	7. True	8. True
9. True	10. True	11. False	12. False	13. True	14. True	15. False	16. True
17. True	18. False	19. False					

I. Very Short Answer type Questions

1. What are integers?

The collection of numbers

$0, +1, -1, +2, -2, -3, +3...$

2. What are the negative integers?

The numbers $-1, -2, -3...$ are referred as negative integers

3. Which of the following is a negative integer?

i) $2, 0, -3$

Here -3 is a negative integer

ii) $1, 2, 5, 0, -7$

Here, -7 is a negative integer

4. Write the following numbers with appropriate sign:

a) **100 m below sea level.**

100 m below sea level means -100m .

b) **15°C below 0°C temperature.**

15°C below 0°C temperature means -15°C

5. What is the opposite of depositing money in the bank?

Withdrawing money from the bank

6. Give an integer which is neither positive nor negative?

Zero, which is neither positive nor negative

7. Write all the integers between -4 and 3 .

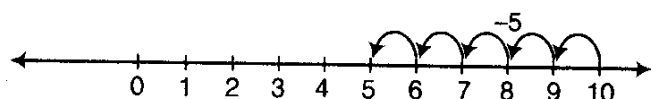
Integers between -4 and 3 are $-3, -2, -1, 0, 1, 2$

8. Write additive inverse of -121

Additive inverse of -121 is $+121$.

9. Find the value of $10 + (-5)$

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



Next Generation School

II. Very Short Answer type

1. Write the digits 0,1,2,3 ...9 in this order and insert '+' or '-' between them to get the result 3.

Arrange the given digits in the given order,

we have $0-1-2-3-4-5-6+7+8+9=-21+24 = 3$

2. Arrange the following integers in the ascending order -2,1,0-3,+4,-5

Ascending (increasing) order of the given integers is $-5 < -3 < -2 < 0 < 1 < 4$

3. Arrange the following integers in the descending order: 0,-1,-4,-3,-6

Descending order of the given integers is $0 > -1 > -3 > -4 > -6$

4. Write two distinct integers whose sum is equal to one of the integers.

Any two integers with one of them as 0.

Hence, we can take 2 and 0, so that

$2 + 0 = 2$, which is equal to the one of the considered integers.

5. Write two integers whose sum is less than both the integers.

For this, we can take any two negative integers Hence, -2 and -3 are the required integers sum $(-2 + -3 = -5)$ which is less than both the integers.

6. Write five integers which are less than -100 but greater than -150.

Required five integers are -140, -130, -120, -110, -101

(Note: There can be many such five integers which are less than -100 but greater than -150)

7. Write the integer which is its own additive inverse

Required integer is '0' which is its own additive inverse as $0 + (-0) = 0$.

8. Subtract -9 from -5.

$$-5 - (-9) = -5 + 9 = 4$$

9. Write additive inverse of 3.

$$-3$$

10. What is the value of m, if $m \times (-1) = 47$

$$m \times (-1) = 47 = -m = 47$$

$$m = -47$$

11. What is the value of x, if $x + 13 = -18$.

$$x + 13 = -18$$

$$x = -18 - 13$$

$$= -31$$

12. Complete the following additive table:

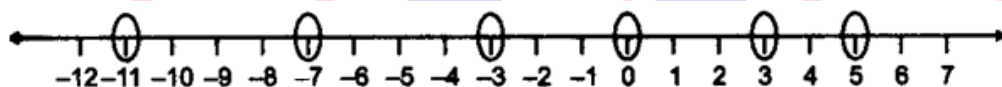
1	-3	-2	-1
3			
2			
1			

1	-3	-2	-1
3	0	1	2
2	-1	0	1
1	-2	-1	0

13. Add -31 to difference of -7 and -17

$$\begin{aligned}
 -31 + [-7 - (-17)] &= -31 + (-7 + 17) \\
 &= -31 + 10 = -21
 \end{aligned}$$

14. Represent -3, -7, -11, 0, 3, 5 on the number line.



15. What is multiplicative inverse of:

- a) 3? b) -3? c) 0?
- a) 3? b) -3? c) 0?

$$\frac{1}{3}$$

$$\frac{-1}{3}$$

Multiplicative inverse of zero is not defined.

16. Sum of two integers is -80. If one of the is -90, find the other integer.

Sum of 2 integers = -80

One of them = -90

Other integer = sum - (1st integer)

$$= -80 - (-90)$$

$$= -80 + 90 = 10$$

17. Subtract -5308 from the sum $[(-2100) + (-2001)]$

$$\begin{aligned} & [(-2100) + (-2001)] - (-2308) \\ &= - (2100 + 2001) + 5308 \\ &= -4101 + 5308 \\ &= 1207 \end{aligned}$$

18. Fill up with $>$, $<$ or $=$ sign:

a) $(-3) + (-6)$ _____ $(-3) - (-6)$

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

$$\text{and } -3 - (-6) = -3 + 6 = 3$$

$$\therefore -9 < 3$$

$$\Rightarrow -3 + (-6) = -3 - 6 = -9$$

b) $(-21) + (-10)$ _____ $(-31) + (-11)$

$$-21 + (-10) = -21 - 10 = -31$$

$$-31 + (-11) = -31 - 11 = -41$$

$$\therefore -31 > -41$$

$$\Rightarrow -21 + (-10) > -31 + (-11)$$

19. Write six negative integers just greater than -17

Six integers just greater than -17 are -16, -15, -14, -13, -12, -11

20. How many integers lie between -9 and -2?

Integers -8, -7, -6, -5, -4, -3 lie between -9 and -2.

\therefore 6 integers lie between 9 and -2.

III. Very Short Answer type Questions

1. What will be the predecessor of integer -1?

Predecessor of -1 will be -2

2. What will be the successor of integer -22?

-21

3. What will be the successor of predecessor of -50?

It will be -50 itself

4. Which is the least integer lying in between -10 and -15?

The least integer would be -14

5. How many whole numbers are there in between -5 and 5?

There are 5 whole numbers in between -5 and 5

6. Write the integer which is its own additive inverse.

The integer is 0.

7. Write the integer which is 4 more than its additive inverse

2

8. Write the integer which is 2 less than its additive inverse

-1

9. Observe the following

$$1 + 2 - 3 + 4 + 5 - 6 - 7 + 8 - 9 = -5$$

Change one '-' sign as '+' sign to get the sum 9.

$$1 + 2 - 3 + 4 + 5 - 6 + 7 + 8 - 9 = 9$$

10. Write two integers whose sum is 6 and difference is also 6.

Integers are 0 and 6.

11. Write two distinct integers whose sum is equal to one of the integers.

Any two integers with one of them as 0, example 2 and 0.

I. Short Answer type Questions

1. Represent the following using integers with proper sign:

a) 35km above sea level

Given, statements can be represented using integer

+ 35

b) A loss of ₹ 400

- ₹ 400

2. Find the sum of the pairs of integers.

a) -6, -5

-6, -5 both have negative signs.

$$\text{So, } -6 + (-5) = -(6 + 5) = -11$$

b) $+4, -3$

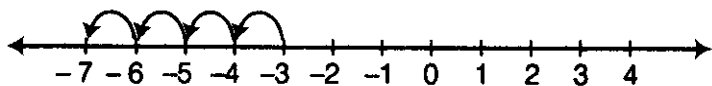
$+4$ and -3 have opposite sign

$$\text{So, } 4 + (-3) = 4 - 3 = 1$$

3. Find the sum of -3 and -4 using the number line.

To add -3 and -4 . Mark -3 on the number line.

Move 4 steps to left of -3 , we reach at -7 .



$$\therefore -3 + (-4) = -7$$

4. Subtract

a) 5 from -6

The additive inverse of 5 is -5 .

$$\text{So, } -6 - 5 = -6 + (-5) = -(6 + 5) = -11$$

b) -3 from -6

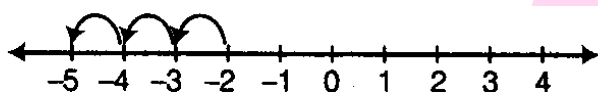
The additive inverse of -3 is $+3$.

$$\text{So, } -6 - (-3) = -6 + 3 = -3$$

5. Subtract using the number line.

a) 3 from -2

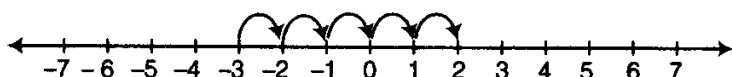
Move 3 steps from -2 on the left, we reach at -5 .



$$\text{So, } -2 - 3 = -5$$

b) -5 from -3

Move 5 steps from -3 on the right, we reach at 2.



$$\text{So, } -3 - (-5) = -3 + 5 = 2.$$

$$\text{So, } -3 - (5) = -3 + 5 = 2$$

6. How many integers are there between -8 and -2 ?

The integers $-7, -6, -5, -4$ and -3 lie between -8 and -2 . So, there are 5 integers between -8 and -2 .

7. Calculate $2-3+4-5+6-7+8-9$.

$$\text{Given, } 2 - 3 + 4 - 5 + 6 - 7 + 8 - 9$$

$$= (2 + 4 + 6 + 8) - (3 + 5 + 7 + 9) = 20 - 24 = -4$$

8. The sum of two integers is 35. If one of the integers is -12, find the other integer.

Given sum is 35. The other integer is obtained by subtracting -12 from 35. So, the required integer = $35 - (-12) = 35 + 12 = 47$.

9. Write the digits 0, 1, 2, 3, 4, 5, 6, 7, 8 and 9 in this order and insert '+' or '-' between them to get the result.

a) 7

To get the sum = 7

$$0 - 1 + 2 + 3 - 4 + 5 - 6 + 7 - 8 + 9$$

$$= 2 + 3 + 5 + 7 + 9 - (1 + 4 + 6 + 8) = 26 - 19 = 7$$

b) -5

To get the sum = -5

$$0 - 1 - 2 + 3 + 4 - 5 + 6 + 7 - 8 - 9$$

$$0 - 1 - 2 + 3 + 4 - 5 + 7 - 8 - 9$$

$$= 3 + 4 + 6 + 7 - (1 + 2 + 5 + 8 + 9)$$

$$= 20 - 25 = -5$$

10. Write five distinct integers, whose sum is 16.

As the required sum is 16. Keep 16 as one of the integer and write two pairs of integers, which are additive inverse of each other.

$$16 = 16 + [3 + (-3) + 5 + (-5)]$$

Hence, the required five integers are

16, 3, -3, 5 and -5.

11. Write the integer which is its own additive inverse?

Zero (0) is its own additive inverse.

12. Write the integer, which is 6 more than its additive inverse.

The integer, which is 6 more than its additive inverse is 3.

13. Write two integers, whose sum is less than both the integers.

For the required integers, we can take any two negative integers.

So, the required integers can be -5, and -7

14. Write two distinct integers, whose sum is equal to one of the integers.

We can take any two integers with one of them as 0.

So, the required integers can be 3, 0.

II. Short Answer type Questions

1. Observe the following:

$$1 + 2 - 3 + 4 + 5 - 6 - 7 + 8 - 9 = -5$$

Change one '-' sign as '+' to get the sum 9.

Given , $1 + 2 - 3 + 4 + 5 - 6 - 7 + 8 - 9 = -5$

Now, add 14 both sides, because we have to get the sum of 9.

Now we can arrange the integer so that the +ve integers and -ve integers are grouped together.

$$\therefore 1 + 2 + 4 + 5 + 8 + 14 + (-3) + (-6) + (-7) + (-9)$$

$$= 1 + 2 + 4 + 5 + 8 + 14 - 3 - 6 - 7 - 9$$

$$= 34 - 25$$

$$= 9$$

As, we add 14 one left hand side, we see that $(-7 + 14) = +7$, it means that we have to change the sign of 7.

2. Divide.

a) $(-272) \div (-16) = \frac{-272}{-16}$ or $16) 272 (17$

$$\underline{-16}$$

$$112$$

$$\underline{-112}$$

$$\underline{00}$$

b) (-324) by $(27) = \frac{-324}{+27}$ or $27)324(12$

$$\underline{27}$$

$$54$$

$$\underline{54}$$

$$\underline{00}$$

Multiply

a) 29 by -11

$$29$$

$$\underline{\times -11}$$

$$-319$$

b) -57 by 0

$$-57$$

$$\underline{\times 0}$$

$$\underline{00}$$

i.e

$$-57 \times 0 = 0$$

3. Simplify:

$$(-12) \times 7 + (-12) \times (-4)$$

By using distributive law.

Since $a \times b + a \times c = a \times (b + c)$, then left

$$A = -12, b = 7 \text{ and } c = -4$$

Therefore

$$\begin{aligned} (-12) \times 7 + (-12) \times (-4) &= -12 [7 + (-4)] \\ &= -12 \times (7 - 4) \\ &= -12 \times 3 \\ &= -36 \end{aligned}$$

Next Generation School

III. Short Answer type Questions

1. Write the digits 0, 1, 2, 3, . . . 9 in this order insert '+' or '-' between them to get the result 3.

We have digits 0, 1, 2, . . . , 9, so arranging them in the order, we get

$$0 - 1 - 2 - 3 - 4 - 5 - 6 + 7 + 8 + 9 = 3$$

2. Write six distinct integers whose sum is 7.

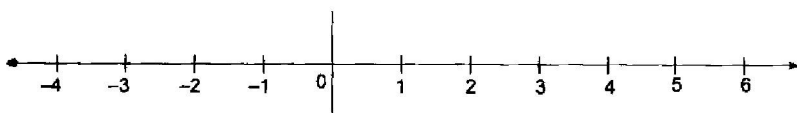
Six integers whose sum is 7 are:

$$-2, -3, 1, 2, 3, 6$$

$$\text{As, } -2 - 3 + 1 + 2 + 3 + 6 = 7$$

3. Write four pairs of integers which are at the same distance from 2 on the number line?

We draw a number line here,



Now, four pairs are (1, 3), (0, 4), (-1, 5), (-2, 6)

4. i) Write four negative integers greater than -20

Four integers greater than -20 are -19, -18, -17, -16

- ii) Write four negative integers less than -10.

Four integers less than -10 are -11, -12, -13, -14

5. Arrange the following integers in the descending order:

$$-3, 0, -1, -4, -3, -6.$$

Arranging integers in descending order, we have

$$0, -1, -3, -3, -4, -6.$$

6. The sum of two integers is 30. If one of the integers is -42, then find the other.

$$\text{Sum of integers} = 30$$

$$\text{One of integers} = -42$$

$$\begin{aligned} \therefore \text{Required integer} &= 30 - (-42) \\ &= 30 + 42 = 72 \end{aligned}$$

7. Sum of two integers is -80. If one of the integers is -90, then find the other.

$$\text{Sum of integers} = -80$$

$$\text{One of the integers} = -90$$

$$\begin{aligned} \therefore \text{Required integer} &= -80 - (-90) \\ &= -80 + 90 = 10 \end{aligned}$$

8. Temperature of a place at 12:00 noon was $+5^{\circ}\text{C}$. Temperature increased by 3°C in first hour and decreased by 1°C in the second hour. What was the temperature at 2: pm?

$$\text{Temperature at 12 noon} = + 5^{\circ}\text{C}$$

$$\text{Temperature increase in 1 hour} = 3^{\circ}\text{C.}$$

$$\text{Temperature decrease in second hour} = 1^{\circ}\text{C}$$

So, temperature at 2:00pm is

$$= 5 + 3 - 1 = 7^{\circ}\text{C.}$$

9. Subtract - 5308 from the sum $[(-2100) + (-2001)]$

We have,

$$= [(-2100) + (-2001)] - (-5308)$$

$$= [-2100 - 2001] + 5308$$

$$= -4101 + 5308 = 1207$$

10. Find the value of $49 - (-40) - (-3) + 69$.

We have,

$$= 49 - (-40) - (-3) + 69$$

$$= 49 + 40 + 3 + 69$$

$$= 89 + 72 = 161$$

11. Write five integers which are less than - 100 but greater than -150.

Integers are -140, -130, -120, -110 and -105.

12. Find:

i) the successor of -398

ii) the predecessor of -192

iii) the negative of -86

i) The successor of $-398 = -398 + 1 = -397$

ii) The predecessor of $-192 = -192 - 1 = -193$

iii) The negative of $-86 = -(-86) = 86$.

13. Add -36 to the difference of -8 and -68.

$$\text{Difference of } -8 \text{ and } -68 = -8 - (-68)$$

$$= -8 + 68 = 60$$

$$\text{Sum of } -36 \text{ and } 60 = -36 + 60 = 24$$

14. Fill in the blanks

i) When two negative integer are added, we get a _____ integer.

ii) If we are at -2 on the number line, we should move in _____ direction to reach 6 and _____ direction to reach -6.

iii) _____ - 3429 = -8567.

iv) The additive inverse of 0 is _____.

v) $-12 + (-3) + (-1) = -16$

i) negative	ii) right, left	iii) -5138	iv) 0	v) -16
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I. Long Answer type Questions

1. Complete each of the following;

a) $30 + (-50) + (-20)$

$$30 + (-50) + (-20) = 30 - (50 + 20)$$

$$= 30 - 70 = -40$$

b) $40 + (-10) + (-15)$

$$40 + (-10) + (-15) = 40 - (10 + 15)$$

$$= 40 - 25 = 15$$

a) $45 - (-5) + 10$

$$45 - (-5) + 10 = 45 + 5 + 10 = 60$$

b) $60 - 10 + 5 - (-5)$

$$60 - 10 + 5 - (-5) = 60 + 5 + 5 - 10 \\ = 70 - 10 = 60$$

c) $16 + (-13) + (-10)$

$$16 + (-13) + (-10) = 16 - (13 + 10) = 16 - 23 = -7$$

d) $0 + 5 - (-6) + (-7)$

$$0 + 5 - (-6) + (-7) = 0 + 5 + 6 - 7 \Rightarrow 11 - 7 = 4$$

2. If we denote the height of a place above sea level by a positive integer and depth below the sea level by a negative integer, write the following using integers with the appropriate signs:

a) 200 m above sea level

$$200 \text{ m above sea level} = + 200 \text{ m}$$

b) 100 m

$$100 \text{ m below sea level} = - 100 \text{ m}$$

c) 10 m above sea level

$$10 \text{ m above sea level} = + 10 \text{ m}$$

d) sea level

$$\text{sea level} = 0$$

3. Temperature of a place at 7: 00 am was 6° C . Temperature increased by 4° C in first hour and decreased by 1° C in the second hour. What was the temperature at 9: 00 am?

$$\text{Temperature at 7: 00 am} = +6^{\circ} \text{ C}$$

It is given that, temperature increased by 4° C in first hour.

So, temperature at 8: 00 am

$$= + 6^{\circ} \text{ C} + 4^{\circ} \text{ C} = 10^{\circ} \text{ C}$$

Temperature decreased in second hour by 1° C .

So, the temperature at 9: 00 am

$$= 10^{\circ} \text{ C} - 1^{\circ} \text{ C} = 9^{\circ} \text{ C}$$

4. Write the opposite of each of the following.

a) **Decrease in size**

Increase in size

b) **Failure**

Success

c) **Profit of ₹ 10**

loss of ₹ 10

d) **1000 AD**

1000 BC

e) **Rise in water level**

Fall in water level

f) **60 km South**

60 km North

e) **10 m above the danger mark of river Ganga.**

10 m below the danger mark of the river Ganga.

f) **20 m below the danger mark of the river Brahmaputra.**

20 m above the danger mark of the river Brahmaputra

g) **Winning by a margin of 2000 votes.**

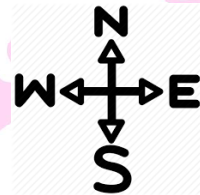
Losing by a margin of 2000 votes.

h) **Depositing ₹ 100 in the Bank account.**

Withdrawing ₹ 100 in the Bank account

i) **20° C rise in temperature.**

20° C fall in temperature.



Next Generation School

5. There is a visit in a school by Director of Education. Girls are asked to prepare rangoli in triangular shape. Dimensions of ΔABC are 26 cm, 28 cm, 25 cm. Garland is to be placed along the side of ΔPQR , which is formed by joining mid-points of sides of ΔABC . The dimensions of ΔPQR are 12.5 cm, 14 cm and 13 cm.

Find the value of $PQ + QR = PR$.

Given, $PQ = 12.5$ cm, $QR = 14$ cm

And $PR = 13$ cm

$$\begin{aligned} \text{Now, } PQ + QR + PR &= (12.5 + 14 + 13) \\ &= 39.5 \text{ cm} \end{aligned}$$

- a) What values are depicted here by Girls?

Beauty, happiness, cooperation

6. Write six distinct integers, whose sum is 7.

Let the six integers be 1, 2, -2, 3, -3 and 6.

Now, sum of the above integers

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

We can arrange the numbers, so that the positive integers and the negative integers are grouped together.

We have, $1 + 2 + 3 + 6 + (-2) + (-3)$

$$= 12 - 2 - 3 = 12 - 5 = 7$$

Hence, required integers are 1, 2, -2, 3, -3 and 6.

Note: There are infinite combinations exist.

7. Write the integer, which is 4 more than its additive inverse.

Firstly, draw a number line.

Let +1 be an integer and its additive inverse is -1. From the number line, we see that +1 is 2 more than its additive inverse, So, we reject this integer.

Again, let +2 be an integer, its additive inverse is -2. From the number line, we see that +2 is 4 more than its additive inverse.

Hence, the required integer is 2.

8. Temperature of a place at 12: 00 noon was + 5° C. Temperature increase by 3° C in first hour and decreased by 1° C. in the second hour. What was the temperature at 2: 00 pm?

Given, initial temperature at 12: 00 noon was + 5 ° C. Since, the temperature increased by 3° C in first hour.

∴ Temperature at 1: 00 pm = 5° C + 3° C = 8° C

Also, the temperature decreased by 1° C in the second hour.

∴ Temperature at 2: 00 pm is 7° C

Hence, the temperature at 2: 00 pm is 7° C

9. Using number line, how do you compare

We know that, on the number line points to the right of zero are positive integers and points to the left of zero negative integers. Also, if move from left to the right on the number line, then number increases and if we move from right to the left on the number line, the number decreases.

a) Two negative integers?

If we compare two negative integers on the number line, then the number which is on the right of the other number will be greater.



Here, we see that -2 is on the right of -3, so -2 is greater and -3 is smaller.

b) Two positive integers?

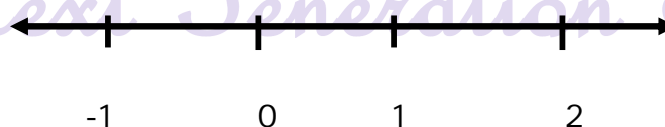
If we compare two positive integers on the number line, then the number which is on right of the other number will be greater.



Here, we see that 3 is on right of the 1, so 3 is greater and 1 is smaller.

c) One positive and one negative integer?

If we compare one positive and one negative integer on the number line, then the number which is on right of the other number will be greater.



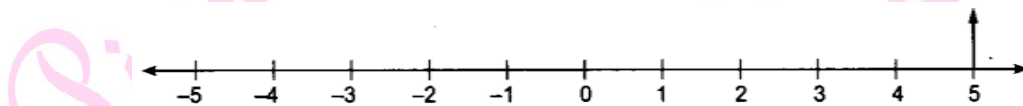
Here, we see that 2 is on right of the -1, so 2 is greater and -1 is smaller.

II. Long Answer type Questions

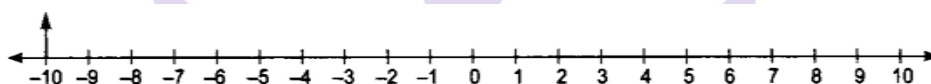
1. Represent the following numbers on a number line:

- i) + 5 ii) -10 iii) + 8 iv) -1 v) -6

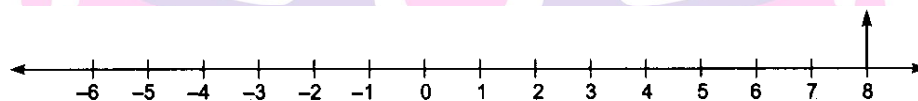
i) + 5



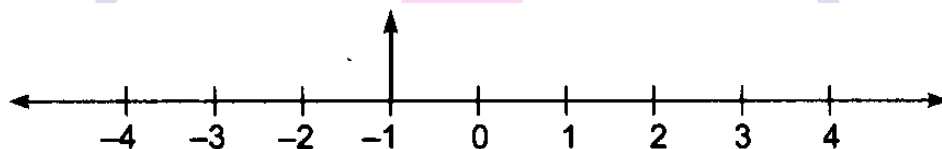
ii) -10



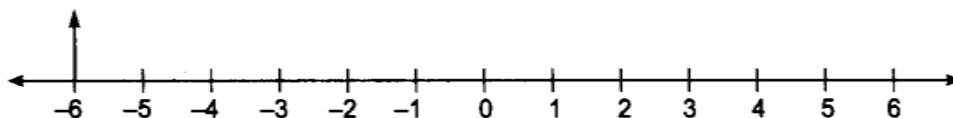
iii) + 8



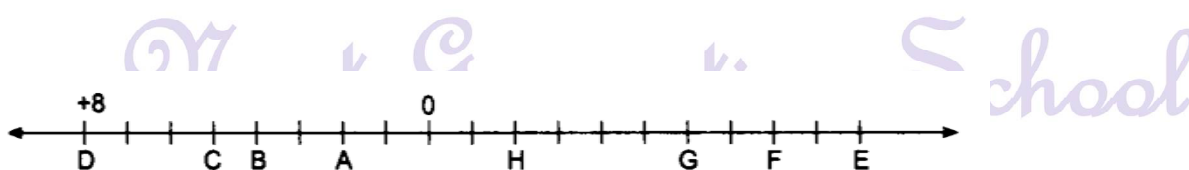
iv) -1



v) -6



2. Adjacent figure is a vertical number line, representing integers. Observe it and locate the following points:



i) If point D is + 8 , then which point is -8?

F

ii) **Is point G a negative integer or a positive integer?**

Negative integer.

iii) **Write integers for points B and E.**

B = + 4, E = -10.

iv) **Which point marked on this number line has the least value?**

E

v) **Arrange all points in decreasing order of value.**

D, C, B, A, O, H, G, F, E.

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

i) **0 and -7**

0 and -7 integers between 0 and -7 increasing order are:

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

ii) **-4 and 4**

-4 and 4 integers between -4 and 4 in increasing order are

-3, -2, -1, 0, 1, 2, 3

iii) **-8 and -15**

-8 and -15 integers between -8 and -15 in increasing order are

iv) **-30 and -23**

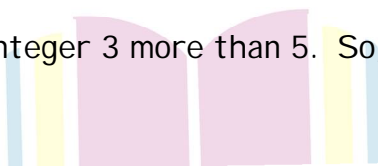
-30 and -23 integers between -30 and -23 in increasing order are:

-29, -28, -27, -26, -25, -24.

4. **Using the number line write the integer which is:**

i) **3 more than 5**

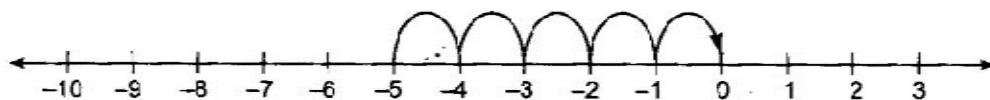
We want to know integer 3 more than 5. So, we start from 5 and proceed 3 steps to right.



So, 3 more than 5 is 8.

ii) **5 more than -5**

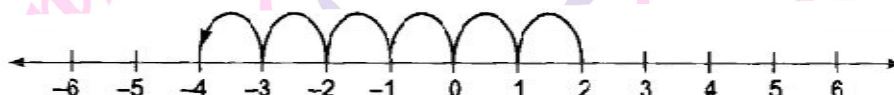
We want to know integer 5 more than -5. So, we start from -5 and proceed to right.



So, 5 more than -5 is 0.

iii) 6 less than 2

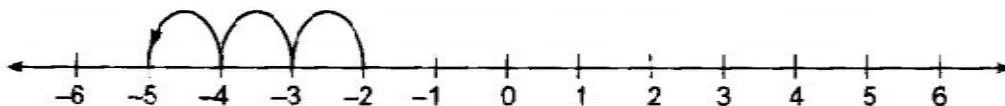
We want to know 6 less than 2. So, we start from 2 and proceed to left.



So, 6 less than 2 is -4

iv) 3 less than -2

We want 3 less than -2 so we start from -2 and proceed to left.



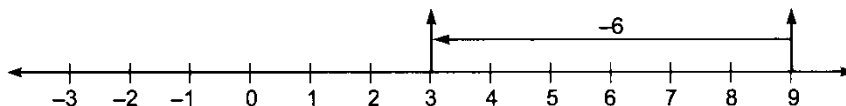
So, 3 less than -2 is -5

5. Use number line and add the following integers:

i) $9 + (-6)$

$$9 + (-6)$$

We begin at 0 and first move 9 units to right to reach 9. The second number is -6 so we move -6 units to left to reach 3.

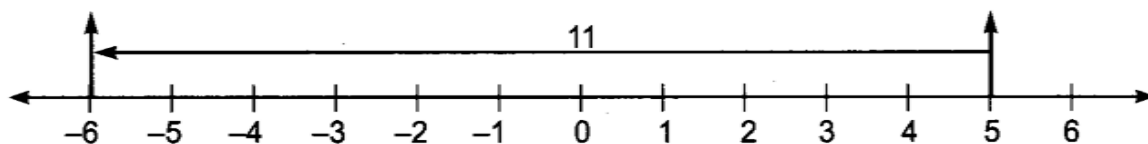


Thus, $9 + (-5) = 9 - 6 = 3$

ii) $5 + (-11)$

$$5 + (-11)$$

We began from 5 which is on right of 0. Now, we move all units to left from 5 to reach - 6.

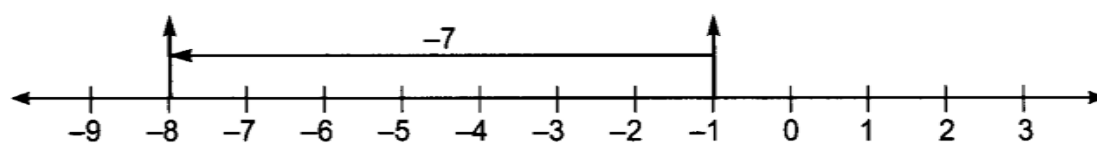


Thus, $5 + (11) = -11 + 5 = -6$

iii) $(-1) + (-7)$

$$(-1) + (-7)$$

We began from -1 which is on left of 0. Now, we move 7 units to left from -1 to reach -8.

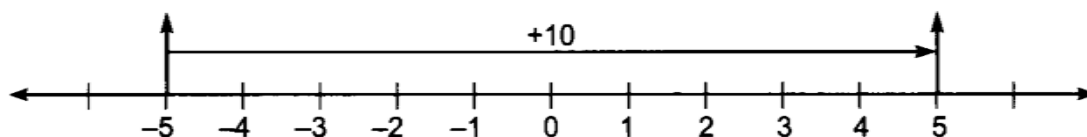


Thus $(-1) + (-7) = -1 - 7 = -8$

iv) $(-5) + 10$

$$(-5) + 10$$

We begin from -5 which is on left of 0. Now, we move 10 units to right from -5 to reach point.

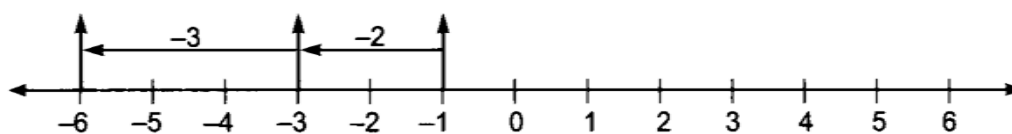


Thus, $-5 + 10 = 10 - 5 = 5$

v) $(-1) + (-2) + (-3)$

$$(-1) + (-2) + (-3)$$

Here, we begin from -1, which is on left of 0. Then, we move 2 units to left from -1 to reach -3. Now, again we move 3 units to left from -3 to reach -6.

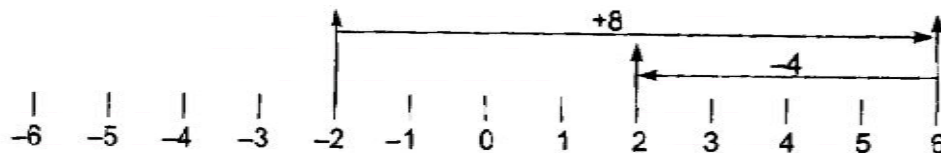


Thus, $(-1) + (-2) + (-3) = -1 - 2 - 3 = -6$

vi) $(-2) + 8 + (-4)$

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

Here we start from -2 which is left to 0. Then, we move 8 units to right from -2 on number line to reach 6.



$$\begin{aligned} \text{Thus, } (-2) + 8 + (-4) &= -2 + 8 - 4 \\ &= 8 - 6 = 2 \end{aligned}$$

6. Add without using number line:

i) $11 + (-7)$

$$11 + (-7) = 11 - 7 = 4$$

ii) $(-13) + (+18)$

$$(-13) + (+18) = 18 - 13 = 5$$

iii) $(-10) + (19)$

$$(-10) + (19)$$

iv) $(-250) + (150)$

$$(-250) + (150)$$

$$= -250 + 150 = -100$$

v) $(-380) + (-270)$

$$(-380) + (-270) = -650$$

vi) $(-217) + (-100)$

$$= -217 - 100 = -317$$

7. Find the sum of:

i) 137 and -354

$$137 \text{ and } -354$$

Adding 137 and -354, we get

$$\begin{aligned}[137] + [-354] &= 137 - 354 && \text{[subtract 137 from 354]} \\ &= -217\end{aligned}$$

ii) **-52 and 52**

Adding -52 and 52, we get

$$\begin{aligned}[-52] + [52] &= -52 + 52 \\ &= 52 - 52 = 0\end{aligned}$$

iii) **-312, 39 and 192**

Adding -312, 39 and 192, we get

$$\begin{aligned}[-312] + [39] + [192] &= [-312] + [192 + 39] \\ &= 312 + [231] \\ &= -312 + 231 = -81\end{aligned}$$

iv) **-50, -200 and 300**

-50, -200 and 300

Adding -50, -200 and 300, we get

$$\begin{aligned}[-50] + [-200] + [300] &= [300] + [(-200) + [-50]] \\ &= [300] + [-200 - 50] \\ &= [300] + [-250] \\ &= 300 - 250 = 50\end{aligned}$$

8. Find:

i) **35 - (20)**

$$\begin{aligned}35 - (20) \\ = 35 - (20) = 35 - 20 = 15\end{aligned}$$

ii) **72 - (90)**

$$\begin{aligned}72 - (90) \\ = 72 - (90) = 72 - 90 = -18\end{aligned}$$

iii) **(-15) - (-18)**

$$\begin{aligned}(-15) - (-18) &= (-15) + 18 && \text{[Additive inverse of -18]} \\ &= 18 - 15 = 3\end{aligned}$$

iv) **$(-20) - (13)$**

$$(-20) - (13) = -20 - 13 = -33$$

v) **$23 - (-12)$**

$$23 - (-12) = 23 + 12 = 35 \quad \text{[Additive inverse of -12]}$$

vi) **$(-32) - (-40)$**

$$\begin{aligned}(-32) - (-40) &= -32 + 40 && \text{[Additive inverse of -40]} \\ &= 40 - 32 = 8\end{aligned}$$

9. Find:

i) **$(-7) - 8 - (-25)$**

$$\begin{aligned}(-7) - 8 - (-25) \\ &= (-7) - 8 + 25 && \text{[Additive inverse of -25]} \\ &= -15 + 25 = 25 - 15 = 10\end{aligned}$$

ii) **$(-13) + 32 - 8 - 1$**

$$\begin{aligned}(-13) + 32 - 8 - 1 \\ &= 32 - 13 - 9 = 32 - 22 = 10\end{aligned}$$

iii) **$(-7) + (-8) + (-90)$**

$$\begin{aligned}(-7) + (-8) + (-90) \\ &= -7 - 8 - 9 \\ &= -15 - 90 = -105\end{aligned}$$

iv) **$50 - (-40) - (-2)$**

$$\begin{aligned}50 - (-40) - (-2) \\ &= 50 + 40 + 2 && \text{[Additive inverse of -40 and -2]} \\ &= 90 + 2 = 92\end{aligned}$$

Next Generation School

10. Compare each of the following:

i) $30 + (-25) + (-10)$

$$30 + (-25) + (-10)$$
$$= 30 - 25 - 10 = 30 - 35 = -5$$

ii) $(-20) + (-5)$

$$(-20) + (-5)$$
$$= -20 - 5 = -25$$

iii) $70 + (-20) + (-30)$

$$= 70 - 20 - 30 = 70 - 50 = 20$$

iv) $-50 + (-60) + 50$

$$-50 + (-60) + 50$$
$$= 50 - 50 - 60 = -60$$

v) $1 + (-2) + (-3) + (-4)$

$$1 + (-2) + (-3) + (-4)$$
$$1 - 2 - 3 - 4$$
$$1 - 9 = -8$$

vi) $0 + (-5) + (-2)$

$$0 + (-5) + (-2)$$
$$= 0 - 5 - 2 = -7$$

vii) $0 - (-6) - (6)$

$$0 - (-6) - (6)$$

[Additive inverse of -6]

$$= 0 + 6 - 6 = 0$$

viii) $0 - 2 - (-2)$

$$0 - 2 - (-2)$$

[Additive inverse of -2]

$$= -2 + 2 = 0$$

I. HOTS (Higher Order Thinking)

1. What will be the predecessor of successor of -10?

The successor of -10 = $-10 + 1 = -9$

The predecessor of -9 = $-9 - 1 = -10$

So, the predecessor of successor of -10 is -10.

2. Compute: $-70 - (-24) + 68 - (-5) - 28$

$$-70 - (-24) + 68 - (-5) - 28$$

$$= 68 + 24 + 5 - 70 - 28$$

$$= 97 - 98 = -1$$

3. Subtract the sum of -1451 and 1267 from the sum of 1146 and -2172

The sum of 1146 and -2172 = $1146 + (-2172)$

$$= 1146 - 2172 = 1026$$

The sum of -1451 and 1267 = $-1451 + 1267 = -184$

Now, (Sum of 1146 and -2172) - (sum of -1451 and 1267)

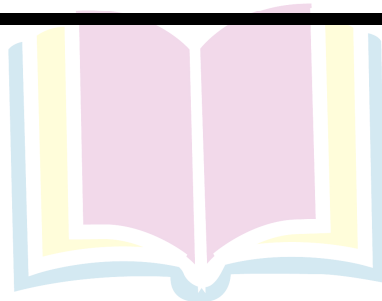
$$= 1026 - (-184)$$

$$= 1210$$

4. If a and b are two integers such that a is the predecessor of b. Find the value of a-b.

If a is predecessor of b, then $a = b - 1$

$$\Rightarrow a - b = -1$$



Next Generation School