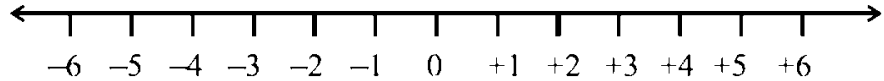
Multiple Choice Questions (Questions 1-17)

Choose the correct option from the four given choices.

1. Every integer less than 0 has the sign

- (A) +
- (B) –
- (C) ×
- (D) ÷

Solution: (B) –



The numbers –1, –2, –3, –4, ... are referred to as negative integers. All negative integers are less than zero.

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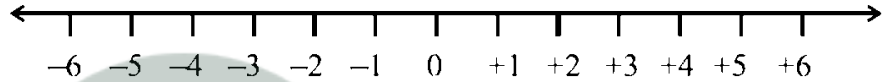
2. The integer '5 units to the right of 0 on the number line' is

- (A) +5
- (B) –5
- (C) +4
- (D) –4

Solution: (A) +5



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3. The predecessor of the integer –1 is

- (A) 0
- (B) 2
- (C) –2
- (D) 1

Solution: (C) –2

The number which comes immediately before a particular number is called its predecessor. To find the predecessor of a number, subtract one from the given number. So, predecessor of -1 = -1 - 1 = -2

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4. Number of integers lying between –1 and 1 is

- (A) 1
- (B) 2
- (C) 3
- (D) 0

Solution: (A) 1

Integer that comes between -1 and 1 is 0.

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5. Number of whole numbers lying between –5 and 5 is

- (A) 10
- (B) 3
- (C) 4
- (D) 5

Solution: (D) 5

We know that whole numbers start from 0. Then, number of whole numbers between -5 and 5 are 0, 1, 2, 3, and 4.

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6. The greatest integer lying between –10 and –15 is

- (A) –10
- (B) –11
- (C) –15
- (D) –14

Solution: (B) –11
In case of negative integers, the smaller number is greater.

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7. The least integer lying between –10 and –15 is

- (A) –10
- (B) –11
- (C) –15
- (D) –14

Solution: (D) –14
In case of negative integers, the bigger number is smaller.

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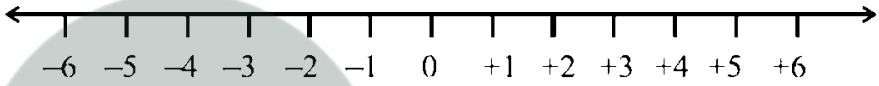
8. On the number line, the integer 5 is located

- (A) to the left of 0
- (B) to the right of 0
- (C) to the left of 1
- (D) to the left of –2

Solution: (B) to the right of 0



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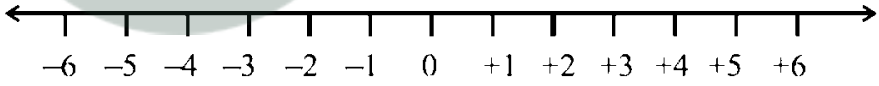
9. In which of the following pairs of integers, the first integer is not on the left of the other integer on the number line?

- (A) (–1, 10)
- (B) (–3, –5)
- (C) (–5, –3)
- (D) (–6, 0)

Solution: (B) (–3, –5)



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10. The integer with negative sign (–) is always less than

- (A) 0
- (B) –3
- (C) –1
- (D) –2

Solution: (A) 0
Negative integers always come to the left of 0, so negative integers are always less than 0.

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11. An integer with positive sign (+) is always greater than

- (A) 0
- (B) 1
- (C) 2
- (D) 3

Solution: (A) 0
Positive integers always come to the right of 0, so positive integers are always greater than 0.

12. The successor of the predecessor of –50 is

- (A) –48
- (B) –49
- (C) –50
- (D) –51

Solution: (C) –50

The successor of a whole number is the number obtained by adding 1 to it. To find the predecessor of a number, subtract one from the given number. So, predecessor of –50 = –50 – 1 = –51 Then, successor of –51 = –51 + 1 = –50

13. The additive inverse of a negative integer

(A) is always negative
(B) is always positive
(C) is the same integer
(D) zero

Solution: (B) is always positive

14. 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 statement is true?

(A) A is cooler than B
(B) B is cooler than A
(C) There is a difference of 2°C in the temperature
(D) The temperature at A is 4°C higher than that at B

Solution: (A) A is cooler than B

We know that in case of negative integers, the bigger number is smaller.

15. When a negative integer is subtracted from another negative integer, the sign of the result

- (A) is always negative
- (B) is always positive
- (C) is never negative
- (D) depends on the numerical value of the integers

Solution: (D) depends on the numerical value of the integers

For example: (i) –4 – (–3) = –4 + 3 = –1 (ii) –6 – (–9) = –6 + 9 = 3

16. 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

Solution: (C) true only when the integer is positive

For example: consider the positive integer 5: 5 + 5 = 10 In positive integers, the sum is greater than the integer. But in negative integers: –4 + (–4) = –4 – 4 = –8 In negative integers, the sum is less than the integer.

17. 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

Solution: (B) –4°C to 8°C

This temperature change has the maximum rise in temperature. The difference between two temperatures = 8 – (–4) = 8 + 4 = 12°C

True/False Questions (Questions 18-39)

State whether the given statements are true (T) or false (F).

18. The smallest natural number is zero.

Solution: False

We know that natural numbers start from 1, so the smallest natural number is 1.

19. Zero is not an integer as it is neither positive nor negative.

Solution: False

Zero is an integer even though it is neither positive nor negative.

20. The sum of all the integers between –5 and –1 is –6.

Solution: False

The sum of all integers between -5 and -1 = -4 + (-3) + (-2) = -9

21. The successor of the integer 1 is 0.

Solution: False

The successor of a whole number is the number obtained by adding 1 to it. Successor of 1 = 1 + 1 = 2

22. Every positive integer is larger than every negative integer.

Solution: True

Every positive integer is always larger than every negative integer. Positive integers always come to the right of 0, so positive integers are always greater than 0.

23. The sum of any two negative integers is always greater than both the integers.

Solution: False

In negative integers: –4 + (–6) = –4 – 6 = –10 In negative integers, the sum is less than both the integers.

24. The sum of any two negative integers is always smaller than both the integers.

Solution: True

In negative integers: –6 + (–7) = –6 – 7 = –13 In negative integers, the sum is less than both the integers.

25. The sum of any two positive integers is greater than both the integers.

Solution: True

Example: consider the two positive integers 11 and 21 Sum of two integers = 11 + 21 = 32 Therefore, sum of any two positive integers is greater than both the integers.

26. All whole numbers are integers.

Solution: True

Whole numbers start from 0, 1, 2, 3.... so it contains 0 and positive integers. Hence, all whole numbers are integers.

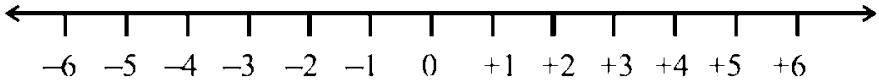
27. All integers are whole numbers.

Solution: False

Whole numbers start from 0, 1, 2, 3.... Whole numbers do not contain negative integers, but integers contain both positive and negative numbers. Therefore, all integers are not whole numbers.

28. Since 5 > 3, therefore –5 > –3
Solution: False
In case of negative integers, the bigger number is smaller. So, –5 < –3

29. Zero is less than every positive integer.
Solution: True

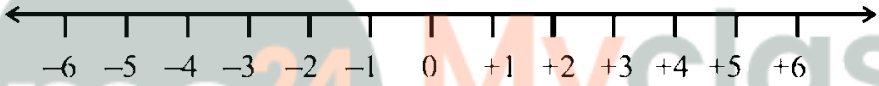


Zero is always less than positive integers and greater than negative integers.

30. Zero is larger than every negative integer.
Solution: True
Zero is always less than positive integers and greater than negative integers.

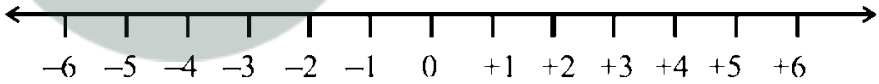
31. Zero is neither positive nor negative.
Solution: True
Zero is neither positive nor negative.

32. On the number line, an integer on the right of a given integer is always larger than the integer.
Solution: True



By observing the number line, we can say that an integer on the right of a given integer is always larger than the integer.

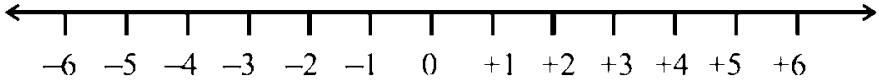
33. –2 is to the left of –5 on the number line.
Solution: False



–2 is to the right of –5 on the number line.

34. The smallest integer is 0.
Solution: False
As we know that 0 is greater than negative integers, so 0 is not the smallest integer.

35. 6 and –6 are at the same distance from 0 on the number line.
Solution: True



From the number line we can say that 6 and –6 are at the same distance of 6 units from 0 on the number line.

36. The difference between an integer and its additive inverse is always even.
Solution: True
Example: Consider an integer 5. Its additive inverse is -5 Difference between an integer and its additive inverse = 5 – (–5) = 5 + 5 = 10

37. The sum of an integer and its additive inverse is always zero.
Solution: True
Example: Consider an integer 8. Its additive inverse is -8 Sum of an integer and its additive inverse = 8 + (–8) = 8 - 8 = 0

38. The sum of two negative integers is a positive integer.
Solution: False
Sum of two negative integers is always negative. Example: Consider two negative integers –8 and –10. Sum of two negative integers = –8 + (–10) = –8 – 10 = –18

39. The sum of three different integers can never be zero.
Solution: False
Example: Consider 3 different integers 5, 10 and -15. Sum of 3 integers = 5 + 10 + (–15) = 5 + 10 – 15 = 15 – 15 = 0 Therefore, the sum of three different integers can be zero.

Fill in the Blanks (Questions 40-41)
Fill in the blanks to make the statements true.
40. On the number line, –15 is to the _____ of zero.
Solution: left
Negative integers always come to the left of 0, so negative integers are always less than 0.

41. On the number line, 10 is to the _____ of zero.
Solution: right
Positive integers always come to the right of 0, so positive integers are always greater than 0.

Note: This document contains solutions to NCERT Exemplar problems for educational purposes.