

The Other Side of Zero

Class VI Mathematics – Worksheets

WORKSHEET-1

Section A: MCQs (PART-1) ($10 \times 1 = 10$ marks)

- Which of the following numbers represents a collection of values located on 'the other side of zero'?
 - Natural Numbers
 - Whole Numbers
 - Negative Integers
 - Positive Fractions
- On a horizontal standard number line, where are negative integers positioned relative to zero?
 - To the right side
 - To the left side
 - Directly above zero
 - Scattered randomly
- What is the additive inverse of the integer -15?
 - 15
 - 0
 - 15
 - 1
- Which of the following statements is true regarding integers?
 - 0 is greater than every positive integer
 - 5 is greater than -2
 - Every negative integer is less than 0
 - 1 is the smallest negative integer
- A submarine travels 350 meters below sea level. How is this depth represented as an integer?
 - +350
 - 350
 - 0
 - 35
- What is the value of the operation expression $(-8) + (+5)$?
 - 13
 - +13
 - 3
 - +3
- If you move 6 steps to the left of -2 on a standard number line, which integer do you reach?
 - +4
 - 8
 - 4
 - +8
- Which number is neither a positive integer nor a negative integer?
 - 1
 - 1
 - 0
 - 10
- The predecessor of the negative integer -9 is:
 - 8
 - 10
 - +10
 - +8
- Evaluate the absolute difference value magnitude between -3 and +3 on a number line:
 - 0
 - 3
 - 6
 - 6

MCQs (PART-2) ($10 \times 1 = 10$ marks)

11. A diver starts at sea level (0 m) and dives down 18 m. His position is represented by

- a. +18 m b. -18 m c. 18 m only d. 0 m

12. Which of the following statements is TRUE?

- a. Zero is a positive integer. b. Zero is a negative integer.
c. Zero is neither positive nor negative. d. Zero is the smallest integer.

13. A lift is on Floor -4. It goes up 9 floors. On which floor does it stop?

- a. +4 b. +5 c. -5 d. -13

14. Which integer is farthest from zero on the number line?

- a. -8 b. +7 c. -6 d. +5

15. A bank account has a balance of ₹250. After withdrawing ₹400, the new balance is

- a. ₹150 b. -₹150 c. ₹650 d. -₹650

16. Which expression represents moving 7 units to the left from +4 on the number line?

- a. $(+4) + (+7)$ b. $(+4) - (-7)$ c. $(+4) + (-7)$ d. $(-4) + (+7)$

17. If the temperature changes from -6°C to $+2^{\circ}\text{C}$, the increase in temperature is

- a. 4°C b. 6°C c. 8°C d. -8°C

18. Which pair of integers are additive inverses of each other?

- a. $(+6, +6)$ b. $(-6, -6)$ c. $(+6, -6)$ d. $(+6, 0)$

19. Which of the following is arranged in increasing order?

- a. -5, -3, -1, 2 b. -1, -3, -5, 2
c. 2, -1, -3, -5 d. -3, -5, -1, 2

20. A mountain peak is 1,850 m above sea level, and a submarine is 350 m below sea level. What is the difference in their heights?

- a. 1,500 m b. 1,850 m c. 2,200 m d. 2,500 m

WORKSHEET-2

Section B: Short Answer (10×2=20 Marks)

1. Write the opposite/inverse of the statement: 'A deposit of Rs 5000 in a savings account'.

2. Represent the following real-world scenario using a directed signed integer: 'A temperature of 7 degrees below 0°C '.

3. Arrange the following integers in increasing/ascending sequence order: -4, 7, 0, -12, 3.

4. Find the sum of the integers -210 and -150 using arithmetic principles.

5. Draw an abstract horizontal representation text link showing the positions of -3, -1, 0, and 2.

6. Evaluate the operation statement: $(+12) - (-6)$.

7. Write two distinct negative integers greater than -5.

8. Find the additive inverse of the integer sum: $(-3) + (+10)$.

9. Compare the pair values using absolute order parameters ($<$, $>$, or $=$): -99 _____ -100 .

10. A person climbs up 15 steps and then descends down 20 steps. Represent their final spot relative to the

Section C: Short Answer ($6 \times 3 = 18$ marks)

11. Compute the structural evaluation of the sequence expression step by step:

$$(-13) + (+25) - (-10) + (-5).$$

12. Using a localized mental number line framework, explain how to compute the net final value of 4 more

13. A container ship has an altitude level of $+25$ meters relative to dock floor lines, while an underwater anchor lies at -18 meters directly underneath. Find the total distance between them.

14. Find the values of 'x' and 'y' if x is the successor of -1 and y is the predecessor of -15 .

15. Formulate and solve: Subtract the sum of -45 and 30 from the additive inverse of -10.

16. Fill in the blanks with appropriate signs to validate the equation path:

$$(-8) + (-4) \text{ ______ } (-8) - (-4).$$

Section D: Long Answer (4×5=20)

17. A high-altitude weather balloon ascends from an initial ground station baseline at an elevation of 1,200 meters. It rises another 4,500 meters, drops 1,800 meters due to structural thermal adjustments, and finally descends 900 meters to anchor at a cloud peak line. Represent each movement as an integer and find the balloon's net final height relative to the ground station.

18. Verify the structural mathematical property of associativity using the sample integer array set

$a = -5$, $b = +3$, and $c = -2$. Show all individual steps of bracket grouping calculations.

19. At 6:00 AM, the temperature of a high-altitude Himalayan valley was recorded at -3°C . By noon, the sun warmed the air and the temperature rose by 11°C . Later at midnight, a heavy sub-zero blizzard caused the temperature to plunge by 14°C . Calculate the final midnight temperature step by step.

20. Construct a comprehensive numerical progression problem containing at least three negative integers and two positive integers using multi-layered brackets such that the final computed value yields 0. Verify your design step by step.

Case Study Based Questions ($2 \times 4 = 8$ marks)

Contextual Passage: A deep-earth research team logs geothermal data fluctuations in an active drilling fault line. The central datum baseline point zero reflects standard crust level. Digging deeper lowers the metric value negatively, while building infrastructure elevations raises it positively. On Monday morning, the specialized remote probe starts tracking at -45 meters. By evening, automated hydraulics shift the probe down by 35 meters, followed by an administrative retrieval pull upwards of 20 meters on Tuesday noon.

21. Frame a single structural arithmetic integer expression to show the exact depth history of the probe and calculate its final depth location on Tuesday noon.

22. Find the total absolute vertical distance traversed by the probe through all its structural shifts combined across Monday and Tuesday.

Self Assessment:

I understood all the concepts ☐ Yes ☐ No

I need more practice ☐ Yes ☐ No

Name of Concepts having doubts/Not Cleared: _____

Parent's Assessment:

My ward understood all the concepts ☐ Yes ☐ No

He/She need more practice ☐ Yes ☐ No

Name of Concepts having doubts/Not Cleared: _____

Signature of Parent:

Teacher's Assessment

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Answers of Worksheet 1:

Q.No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ANS	c	b	c	c	b	c	b	c	b	c	b	c	b	a	b	c
Q N	17	18	19	20												
ANS	c	c	a	c												

Answers of Worksheet 2:

Q N	1	2	3	4	5	6	7	8
ANS	A withdrawal of ₹5000 from a savings account.		-12, -4, 0, 3, 7	-360		+18	-4, -3	-7
Q N	9	10	11	12	13	14	15	16
ANS	-99 > -100.	4	17	-3	43 m	0, -16	25	<
Q N	17	18	19	20	21	22		
ANS	3000m		-6°C		-60	55m		