

Mathematics — Ganita Manjari

Chapter 3 Test 5

The World of Numbers

Class IX | 2026-27

Time Allowed: 45 Minutes

Maximum Marks: 25

General Instructions

1. All 13 questions are compulsory. Choose one option in A; show working in B-D.
2. Show the main steps and give reasons where asked. Calculators are not allowed.
3. Give fractions in lowest terms. Use exact values unless a decimal is requested.

SECTION A

(5 questions × 1 mark = 5 marks)

1. The value of $-9 - (-14)$ is:

- | | |
|---------|--------|
| (A) 5 | (B) -5 |
| (C) -23 | (D) 23 |

2. The decimal expansion of $\frac{3}{49}$ is:

- (A) Terminating in 2 places
- (B) Terminating in 7 places
- (C) An integer
- (D) Non-terminating and repeating

3. Which number is irrational?

- | | |
|---------------------|--------------------|
| (A) $5 + \sqrt{9}$ | (B) $5 + \sqrt{2}$ |
| (C) $5 - \sqrt{25}$ | (D) $\sqrt{16}$ |

4. Which rational number has no multiplicative inverse?

- | | |
|-------|-------------------|
| (A) 1 | (B) -1 |
| (C) 0 | (D) $\frac{1}{2}$ |

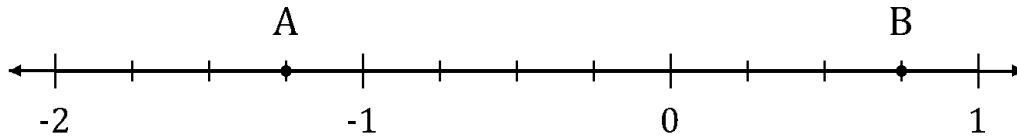
5. The decimal 2.469999 ..., with 9 repeating forever, equals:

- | | |
|-----------|------------|
| (A) 2.47 | (B) 2.46 |
| (C) 2.469 | (D) 2.4701 |

SECTION B

(4 questions $\times$ 2 marks = 8 marks)

6. The unit intervals are divided into quarters. Find AB and the difference between the distances of A and B from zero.



7. Evaluate using the distributive property:

$$\frac{3}{7} \left(\frac{14}{9} - \frac{7}{6} \right).$$

8. Use cross-products to show that $\frac{3}{8}$ and $\frac{18}{48}$ are equal. State their common lowest-term form.

9. Convert 2.16666 ... into a fraction in lowest terms. Only 6 repeats.

SECTION C

(3 questions $\times$ 3 marks = 9 marks)

10. Prove that $\sqrt{5}$ is irrational.

11. Show algebraically that $0.499999 \dots = 0.5$, where 9 repeats forever.

12. Non-zero rational numbers a and b satisfy $a + b = 0$. Without choosing numerical values, show that their product is negative.

SECTION D

(1 application question $\times$ 3 marks = 3 marks)

13. A tank holds $12\frac{1}{2}$ L when full. It contains $7\frac{3}{4}$ L, and $3\frac{2}{3}$ L is added. Will it overflow?

Find the amount of water and the empty capacity afterwards.