

Mathematics — Ganita Manjari

Chapter 3 Test 4

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 sum of any two natural numbers is always:

- | | |
|----------------------|----------------|
| (A) Negative | (B) Irrational |
| (C) A natural number | (D) Zero |

2. If non-zero rational numbers a and b satisfy $a + \frac{1}{b} = 0$, then ab is:

- | | |
|--------|--------------------|
| (A) -1 | (B) 0 |
| (C) 1 | (D) Not determined |

3. The value of $|- \frac{4}{5}|$ is:

- | | |
|--------------------|-------------------|
| (A) $-\frac{4}{5}$ | (B) $\frac{5}{4}$ |
| (C) $-\frac{5}{4}$ | (D) $\frac{4}{5}$ |

4. The number 0.99999 ..., with 9 repeating forever, is:

- (A) Slightly less than 1
(B) Exactly 1
(C) Greater than 1
(D) Irrational

5. The smallest of these sets containing $\sqrt{49}$ is:

- (A) Rational numbers
(B) Integers
(C) Natural numbers
(D) Irrational numbers

SECTION B

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

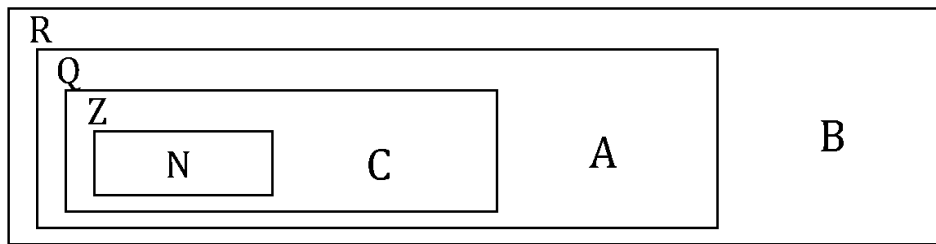
6. Simplify:

$$-\frac{11}{12} - \left(-\frac{5}{8}\right).$$

7. Use division to express $\frac{5}{11}$ as a decimal. Identify the repeating block.

8. Describe how to construct a segment of length $\sqrt{10}$ units using a right triangle with one side of length 3 units.

9. The nested rectangles show number sets. Name the region containing each of -4 , $\frac{3}{5}$, $\sqrt{6}$ and 8. Use A, B, C or N.



SECTION C

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

10. Explain why neither $8 \div 0$ nor $0 \div 0$ defines a real number by the usual rules of division.

11. Classify 0.101001 and 0.101001000100001 ... as rational or irrational. In the second number, successive 1s are separated by 1, 2, 3, 4, ... zeros. Explain the difference.

12. A reduced fraction has denominator $2^2 \times 5^4$. Explain why its decimal needs exactly four places. Verify this for numerator 7.

SECTION D

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

13. At dawn, the temperature is -7°C . It rises by 12°C by noon and then falls by 9°C . Find the noon temperature, the final temperature and the overall change from dawn.