

Mathematics — Ganita Manjari

Chapter 3 Test 10

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. When dividing one rational number by another, a rational result is guaranteed provided that:

- | | |
|-------------------------------|-----------------------------------|
| (A) The dividend is positive | (B) The divisor is non-zero |
| (C) Both numbers are integers | (D) The divisor is greater than 1 |

2. The set of real numbers consists of:

- (A) Only integers
- (B) Only fractions
- (C) Only irrational numbers
- (D) All rational and irrational numbers

3. A non-terminating decimal represents a rational number exactly when:

- (A) It eventually repeats a fixed block
- (B) It contains the digit 0
- (C) It starts with 3
- (D) It has infinitely many distinct blocks with no repetition

4. If $x = -\frac{7}{3}$, which equality is correct?

- | | |
|--------------------------------|------------------|
| (A) $ x = -\frac{7}{3}$ | (B) $ x < -x $ |
| (C) $ x = -x = \frac{7}{3}$ | (D) $ x = 0$ |

5. Which infinite decimal is another representation of 4.5?

- | | |
|-----------------|-----------------|
| (A) 4.59999 ... | (B) 4.49999 ... |
| (C) 4.05050 ... | (D) 4.44444 ... |

SECTION B

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

6. Evaluate $(-18) \times 4 + (-7) \times (-6)$, showing the signs of both products.
7. Find two distinct rational numbers strictly between $-\frac{2}{3}$ and $-\frac{1}{3}$. Check both using a common denominator.
8. Express $0.123123123 \dots$ as a fraction in lowest terms. The block 123 repeats.
9. Arrange $-\sqrt{5}$, -2 , $-\frac{7}{4}$ and 0 in increasing order. Justify the position of $-\sqrt{5}$.

SECTION C

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

10. Solve for x and verify:

$$\frac{7}{8}x - \frac{1}{3} = \frac{5}{12}.$$

11. A student says $\frac{14}{35}$ has a repeating decimal because 35 contains factor 7. Identify the error, reduce the fraction and give its decimal.
12. Find the smallest positive common denominator m that allows five distinct fractions $\frac{k}{m}$ strictly between $\frac{1}{6}$ and $\frac{1}{3}$, with integer numerators k . List five such fractions.

SECTION D

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

13. A square garden has side $\frac{3}{2}$ m. Find its diagonal exactly and show that the diagonal is longer than 2.1 m but shorter than 2.2 m.

