

Mathematics — Ganita Manjari

Chapter 3 Test 9

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. A rational number can have:

- (A) Only one fraction form
- (B) Exactly two fraction forms
- (C) No fraction form
- (D) Infinitely many equivalent fraction forms

2. Which is a natural number?

- (A) $\sqrt{64}$
- (B) $-\sqrt{64}$
- (C) $\frac{1}{64}$
- (D) 0

3. Which pair of descriptions applies to π ?

- (A) Rational and integer
- (B) Natural and real
- (C) Irrational and real
- (D) Rational and irrational

4. The rational number halfway between 2 and 3 is:

- (A) $\frac{3}{2}$
- (B) $\frac{5}{2}$
- (C) $\frac{2}{3}$
- (D) $\frac{7}{2}$

5. The number 0.101010 ..., with 10 repeating, is rational because:

- (A) It has a last digit
- (B) It has no decimal point
- (C) A fixed block repeats indefinitely
- (D) Every non-terminating decimal is rational

SECTION B

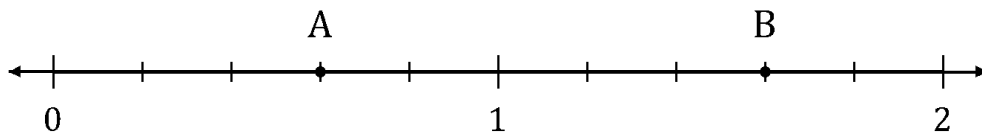
(4 questions $\times$ 2 marks = 8 marks)

6. Use distributivity to explain why $(-5) \times (-3) = 15$.

7. Find the difference in lowest terms:

$$\frac{17}{24} - \frac{5}{18}$$

8. Each unit interval is divided into five equal parts. Read the numbers at A and B and find the distance AB.



9. Express 2.05 as a fraction in lowest terms. State whether the fraction is an integer.

SECTION C

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

10. Without long division, classify the decimals of $\frac{11}{18}$, $\frac{27}{750}$ and $\frac{13}{625}$. For each terminating decimal, give the exact number of places.

11. A student says there is no rational number between 3.1415 and 3.1416. Disprove the claim by giving five distinct rational numbers in increasing order.

12. Explain why no real number x can satisfy $x^2 = -1$. Consider positive, negative and zero values of x .

SECTION D

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

13. A square tile has area 18 square units. Find its side length and diagonal length exactly. Which of the two lengths is rational?