

Mathematics — Ganita Manjari

Chapter 3 Test 7

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. Which statement is always true?

- (A) Every real number is rational
- (B) Every integer is natural
- (C) Every rational number is an integer
- (D) Every rational number is real

2. Which calculation disproves closure of natural numbers under subtraction?

- (A) $8 - 3 = 5$
- (B) $3 - 8 = -5$
- (C) $9 - 4 = 5$
- (D) $6 - 2 = 4$

3. A positive rational number divided by a negative rational number is:

- (A) Negative
- (B) Positive
- (C) Zero
- (D) Always an integer

4. The number 3.141592, with no further digits, is:

- (A) Exactly π
- (B) Irrational
- (C) Rational
- (D) Not real

5. If $\frac{p}{40}$ is in lowest terms, its decimal expansion terminates after exactly:

- (A) 1 place
- (B) 2 places
- (C) 4 places
- (D) 3 places

SECTION B

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

6. Find the quotient:

$$-\frac{7}{10} \div \left(-\frac{21}{25}\right).$$

7. Find k:

$$-\frac{4}{9} = \frac{k}{63}.$$

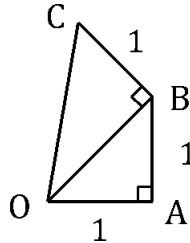
8. Let a and b be distinct rational numbers with $a < b$. Prove that $\frac{a+b}{2}$ is rational and lies strictly between a and b .

9. Express $-0.363636 \dots$ as a fraction in lowest terms. The block 36 repeats.

SECTION C

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

10. $OA = AB = BC = 1$ unit. AB is perpendicular to OA , and BC is perpendicular to OB . Find OB and OC , and classify both lengths as rational or irrational.



11. A student says the equation below has exactly one rational solution. Decide whether this is correct, giving reasons.

$$\frac{5}{6}\left(x + \frac{3}{5}\right) = \frac{5}{6}x + \frac{1}{2}.$$

12. Predict the decimal types of $\frac{45}{600}$ and $\frac{7}{90}$ without long division. State the exact number of decimal places for any terminating result.

SECTION D

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

13. A shop sells ribbon at Rs 80 per metre. Meera buys $2\frac{3}{4}$ m and $3\frac{2}{5}$ m. Find the total length, the cost and the change from Rs 500.