Mathematics

Practice Test Paper 4

(Chapter 1: Real Numbers)

Class X | 2026–27

Time Allowed: 45 Minutes | Maximum Marks: 25

General Instructions

1. All 13 questions are compulsory. The paper has four sections: A, B, C and D.
2. Section A: 5 × 1 = 5 marks; Section B: 4 × 2 = 8 marks; Section C: 3 × 3 = 9 marks; Section D: 1 × 3 = 3 marks.
3. Choose one correct option in Section A. Show the necessary steps and reasoning in Sections B, C and D.
4. Use prime factorisation where required. Use of calculators is not allowed.

SECTION A

(5 questions × 1 mark = 5 marks)

1. If $7429 = 17 \times 19 \times p$, where p is prime, then p equals:

(A) 13 (B) 19
(C) 23 (D) 29

2. The LCM of 8, 9 and 25 is:

(A) 225 (B) 450
(C) 900 (D) 1800

3. The positive square root of $\frac{9}{25}$ is:

(A) $\frac{3}{5}$ (B) $\frac{9}{5}$
(C) $\frac{3}{25}$ (D) $\frac{5}{3}$

4. The HCF of any two positive even integers must be divisible by:

(A) 3 (B) 4
(C) 2 (D) 6

5. If r is a non-zero rational number and x is irrational, then rx is:

(A) always rational
(B) always irrational
(C) always an integer
(D) always zero

SECTION B

(4 questions × 2 marks = 8 marks)

6. Find the HCF and LCM of 96 and 404 by prime factorisation.

7. Given that $\sqrt{3}$ is irrational, prove that $5 - \sqrt{3}$ is irrational.

8. Find the least positive integer by which 180 must be multiplied to obtain a perfect square. Justify your answer using prime factorisation.

9. For $a = 3^2 \times 5^4$ and $b = 3^4 \times 5^2$, find the ratio of their LCM to their HCF.

SECTION C

(3 questions × 3 marks = 9 marks)

10. Given that $\sqrt{2}$ and $\sqrt{3}$ are irrational, prove that $\sqrt{2} + \sqrt{3}$ is irrational.

11. Find the HCF and LCM of 26, 65 and 117. Does their product equal HCF × LCM? Show the calculation.

12. Two positive integers are in the ratio 3 : 5 and have HCF 16. Find the integers and their LCM.

SECTION D

(Application Based Question - 3 marks)

13. A rectangular floor measures 825 cm by 675 cm. It is to be covered completely with identical square tiles of the greatest possible side length, without cutting any tile.

(i) Find the side length of each tile.

(ii) How many tiles fit along the 825 cm edge?

(iii) How many tiles are needed in total?