Mathematics

Practice Test Paper 7

(Ganita Prakash Part 2 | Chapter 2: The Baudhāyana-Pythagoras Theorem)

Class VIII | 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 marks; Section B - 8 marks; Section C - 9 marks; Section D - 3 marks.
3. Choose one correct option in Section A. Show the necessary working in Sections B, C and D.
4. Study the images and graphs carefully before answering the related questions.

SECTION A

(5 questions × 1 mark = 5 marks)

1. Which can never be the last digit of the square of a whole number?

(A) 0 (B) 1
(C) 2 (D) 9

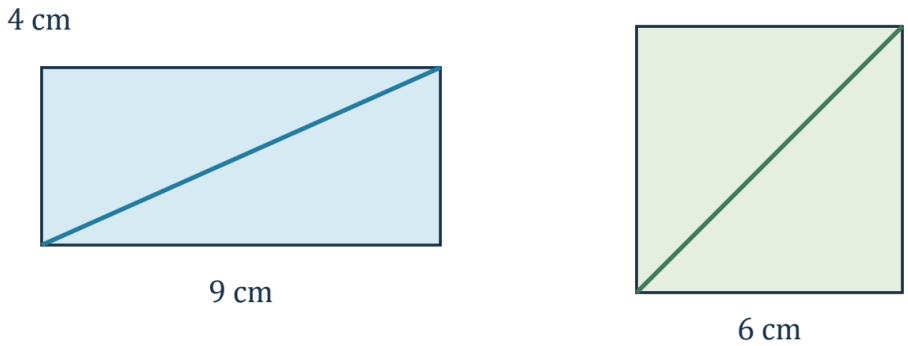
2. Which information is essential before using the square-sum theorem to find a side of a triangle?

(A) It is a right triangle (B) It is drawn horizontally
(C) All its sides are integers (D) It has two equal sides

3. A right triangle has area 24 cm^2 and one perpendicular side 6 cm. Its other perpendicular side is:

(A) 4 cm (B) 6 cm
(C) 8 cm (D) 10 cm

4. The rectangle and square shown have equal areas. Which has the longer diagonal?



(A) The rectangle (B) The square
(C) Both are equal (D) The areas do not match

5. What is $61^2 - 60^2$?

(A) 1

(B) 60

(C) 121

(D) 3600

SECTION B

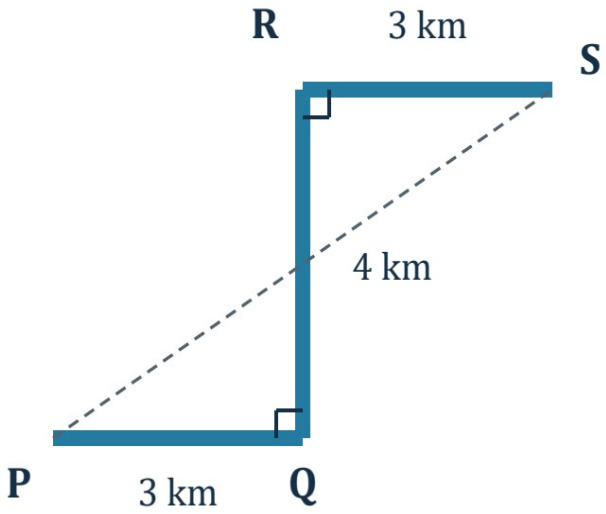
(4 questions × 2 marks = 8 marks)

6. Simplify $n^2 - (n-1)^2$. Explain why the result is the nth odd number.

7. The numbers 0, 7 and 7 satisfy the square-sum equation. Explain why they cannot be the sides of a right triangle or a Baudhāyana triple.

8. Suppose $\sqrt{2} = \frac{p}{q}$, where p and q are positive integers. Then $p^2 = 2q^2$. Explain the contradiction by counting factors of 2.

9. The route follows the three perpendicular stretches shown. Find the distance travelled from P to S and the exact straight-line distance PS.



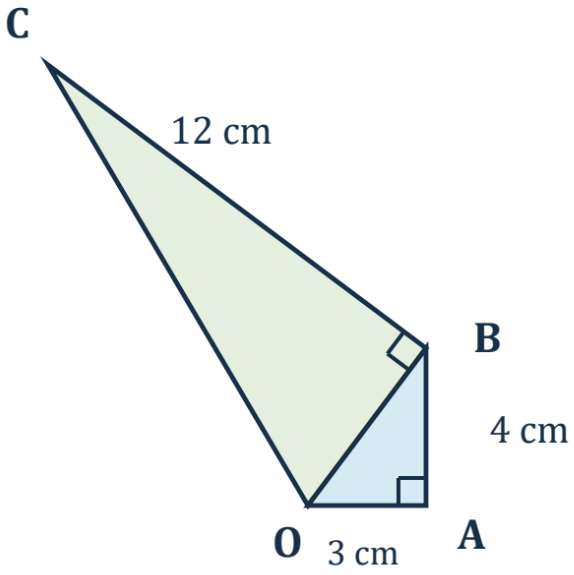
SECTION C

(3 questions × 3 marks = 9 marks)

10. You have a square of side a. Describe a right-triangle construction that gives a square with five times its area, using a and 2a as two lengths. Explain why it works.

11. Given a Baudhāyana triple (a, b, c), prove that (ka, kb, kc) is also a triple for every positive integer k. Explain how this produces infinitely many triples.

12. In the diagram, OA is perpendicular to AB and OB is perpendicular to BC. Find OB and OC. Explain why OB must be found first.



SECTION D

(Application Based Question - 3 marks)

13. A square sheet has side 10 cm. Its side midpoints are joined, and the four outer corners are removed. The same process is repeated on the remaining square.

(i) Find the area after the first cut.

(ii) Find the area after the second cut.

(iii) Find the side of the final square.