Mathematics

Practice Test Paper 10

(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. A square with area 2 square units has side length:

(A) 1 unit

(B) $\sqrt{2}$ units

(C) 2 units

(D) 4 units

2. If each length in a right triangle is multiplied by 3, the area of the square on its hypotenuse is multiplied by:

(A) 3 (B) 6

(C) 9 (D) 27

3. Which of these lists contains only primitive Baudhāyana triples?

(A) (3, 4, 5), (6, 8, 10)

(B) (5, 12, 13), (8, 15, 17)

(C) (9, 12, 15), (7, 24, 25)

(D) (12, 16, 20), (15, 36, 39)

4. If $m^2 < N < (m+1)^2$ for a positive integer m, then:

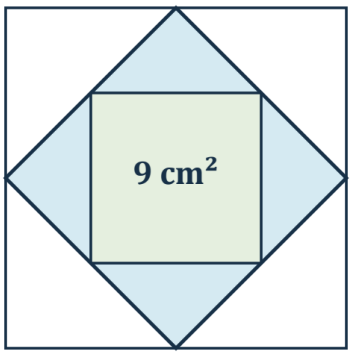
(A) $\sqrt{N} < m$

(B) $\sqrt{N} = m$

(C) $m < \sqrt{N} < m+1$

(D) $\sqrt{N} > m+1$

5. Each inner square joins the side midpoints of the square just outside it. The smallest square has area 9 cm^2. What is the area of the outermost square?



(A) 18 cm^2 (B) 27 cm^2

(C) 36 cm^2 (D) 81 cm^2

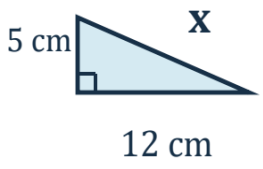
SECTION B

(4 questions × 2 marks = 8 marks)

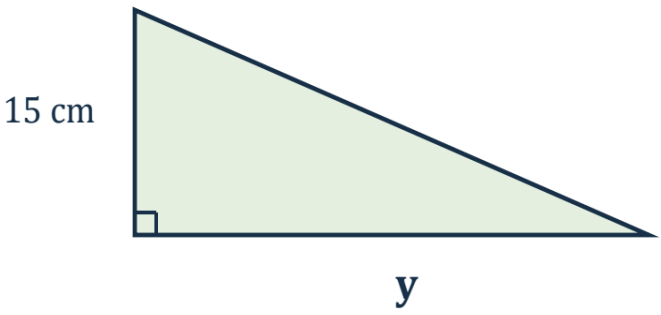
6. A right triangle has perpendicular sides 8 cm and 12 cm. Find its hypotenuse exactly. Explain why rounding it to 14 cm before checking the theorem gives an unequal result.

7. The marked right triangles are scaled copies. Use the smaller triangle to find x and the scale factor, then find the missing side y of the larger triangle.

Panel A



Panel B



8. A square of area 50 cm^2 is cut along a diagonal. Find the area of each triangular piece and the exact length of the cut.

9. The hypotenuse of an isosceles right triangle is 18 cm. Find the square of each leg and the area of the triangle.

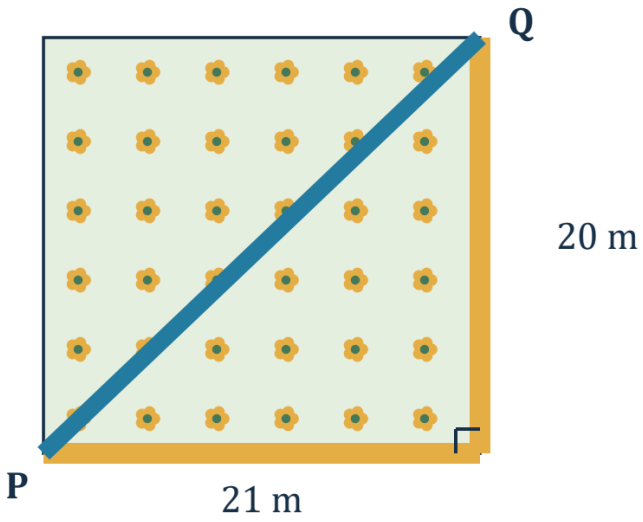
SECTION C

(3 questions × 3 marks = 9 marks)

10. Is every Baudhāyana triple primitive? Use (12, 35, 37) and its double to support your answer, showing the square-sum check for the double.

11. In a dissection, a large square of side a + b contains four right triangles with legs a and b, leaving a central square of side c. Find the areas and use them to obtain the square-sum theorem.

12. A rectangular courtyard has two paved strips as shown. One follows two adjacent sides, and the other joins their endpoints directly. Find the length saved by the direct strip and its cost at ₹50 per metre.



SECTION D

(Application Based Question - 3 marks)

13. A right triangle has perpendicular sides a and b and hypotenuse c. Squares are constructed on all three sides. The side b is kept fixed while a is doubled.

(i) Write the original square-sum relation.

(ii) Write the new hypotenuse squared in terms of a and b.

(iii) By how much does the area of the square on the hypotenuse increase?