



परमाणु ऊर्जा शिक्षण संस्था  
Atomic Energy Education Society  
उत्तर कुंजी / Answer Key (2025-26)

कक्षा /Class: VIII विषय /Subject: Mathematics माह/ Month: \_\_\_\_\_ अंक/Marks: 40  
दिया गया पाठ्यक्रम/Portion covered: Part 2, Chapter 2 (THE BAUDHĀYANA PYTHAGORAS  
THEOREM)

**SECTION- A (10×1= 10 marks)**

1. a) 10 cm
2. b) The square of hypotenuse = Sum of squares of other two sides ( $a^2 + b^2 = c^2$ )
3. c) 12 cm
4. a) 3, 4, 5
5. a) Right-angled
6. a) 8 m
7. a) 12 cm
8. b) Sum of squares of other two sides
9. b) 6, 8, 12
10. A) Both A and R are true and R is the correct explanation of

**SECTION- B (04×02= 08 marks)**

11. Hypotenuse of isosceles right triangle (side = 3 cm)  
 $= \sqrt{(3^2 + 3^2)}$   
 $= \sqrt{18}$   
 $= 3\sqrt{2}$  cm
12. If hypotenuse = 72 cm (isosceles right triangle)  
Let each side = x  
 $72 = x\sqrt{2}$   
 $x = 72/\sqrt{2}$   
 $x = 36\sqrt{2}$  cm

Other two sides =  $36\sqrt{2}$  cm each

13. Sides 5 cm and 12 cm  
Hypotenuse =  $\sqrt{(5^2 + 12^2)}$   
 $= \sqrt{(25 + 144)}$   
 $= \sqrt{169}$   
 $= 13$  cm
14. Baudhāyana triples  $\leq 20$   
(3,4,5)  
(5,12,13)  
(6,8,10)  
(8,15,17)  
(9,12,15)  
(12,16,20)

**SECTION- C (03×03= 09 marks)**

15. Statement is TRUE  
Example:  
(3,4,5) is a triple  
Multiply by 2  $\rightarrow$  (6,8,10)  
Since:  
 $(6)^2 + (8)^2 = 36 + 64 = 100 = (10)^2$   
Hence proved.

16. 5 scaled versions of (12,5,13)  
 (12,5,13)  
 (24,10,26)  
 (36,15,39)  
 (48,20,52)  
 (60,25,65)  
 Only (12,5,13) is primitive.  
 Others are not primitive.

17. Lotus problem  
 Let depth of lake = x  
 Using Pythagoras:  
 $(x + 1)^2 = x^2 + 3^2$   
 $x^2 + 2x + 1 = x^2 + 9$   
 $2x = 8$   
 $x = 4$   
 Depth of lake = 4 units

**SECTION- D (01×05= 05 marks)**

18. (a) Area difference =  $7^2 - 5^2$   
 $= 49 - 25$   
 $= 24$   
 Side of required square =  $\sqrt{24}$   
 $= 2\sqrt{6}$  **units**

(b) Rhombus side

Half diagonals = 12 and 35  
 Side =  $\sqrt{(12^2 + 35^2)}$   
 $= \sqrt{(144 + 1225)}$   
 $= \sqrt{1369}$   
 $= 37$  **units**

**SECTION- E (02×04= 08 marks)**

19. Marks will be awarded for correct steps.

**20. Tree Problem**

Height = 25 m  
 Distance from base = 15 m  
 Let broken part = x  
 $x^2 = 15^2 + \text{remaining height}^2$   
 Let remaining height = y  
 $y^2 + 15^2 = x^2$   
 $y + x = 25$   
 Solving:  
 $y^2 + 225 = (25 - y)^2$   
 $y^2 + 225 = 625 - 50y + y^2$   
 $225 = 625 - 50y$   
 $50y = 400$   
 $y = 8$   
 Broken part =  $25 - 8 = 17$  **m**  
**If tree broke at 12 m**  
 Remaining height = 12 m  
 Broken part =  $25 - 12 = 13$  m  
 Distance from base =  $\sqrt{(13^2 - 12^2)}$   
 $= \sqrt{(169 - 144)}$   
 $= \sqrt{25}$   
 $= 5$  **m**