



SAT Math Practice

Topic: Right Triangles and Pythagoras' Theorem

Instructions

Solve the following problems related to right triangles and Pythagoras' theorem. Show all work clearly. For multiple-choice questions, circle the correct answer. For grid-in questions, fill in the grid with your answer.

Practice Problems

1. In a right triangle, the legs are 6 and 8. What is the length of the hypotenuse?
 - (a) 10
 - (b) 12
 - (c) 14
 - (d) 16
2. If the hypotenuse of a right triangle is 13 and one leg is 5, what is the length of the other leg?
 - (a) 8
 - (b) 12
 - (c) 10
 - (d) 15

3. A triangle has sides 9, 12, and 15. Is this a right triangle?
- (a) Yes, by the Pythagorean theorem
 - (b) No, the sides don't satisfy the theorem
 - (c) Yes, because the hypotenuse is the longest side
 - (d) No, because the sides don't form a perfect square
4. The legs of a right triangle are 7 and 24. Find the length of the hypotenuse.
- (a) 25
 - (b) 26
 - (c) 28
 - (d) 30
5. A right triangle has a hypotenuse of length 17 and one leg of length 8. What is the length of the other leg?
- (a) 15
 - (b) 12
 - (c) 9
 - (d) 10
6. In a right triangle, the lengths of the two legs are equal. If the hypotenuse is $\sqrt{50}$, what is the length of each leg?
- (a) 5
 - (b) 7
 - (c) 4
 - (d) 3
7. A right triangle has legs of lengths 6 and 8. What is the area of the triangle?
- (a) 24
 - (b) 48
 - (c) 12
 - (d) 18
8. If a right triangle has legs of lengths 8 and 15, what is the perimeter of the triangle?
- (a) 36

- (b) 30
- (c) 25
- (d) 40

9. The sides of a right triangle are 7, 24, and x . If x is the hypotenuse, what is the value of x ?

- (a) 25
- (b) 20
- (c) 18
- (d) 15

10. A triangle with sides 8, 15, and 17 is a right triangle. Find the area of the triangle.

- (a) 60
- (b) 120
- (c) 72
- (d) 34

11. A triangle has sides 5, 12, and 13. Is this a right triangle? Verify using the Pythagorean theorem.

- (a) Yes, the Pythagorean theorem holds.
- (b) No, the Pythagorean theorem doesn't hold.
- (c) Yes, because the hypotenuse is the longest side.
- (d) No, because the triangle does not satisfy the Pythagorean theorem.

12. In a right triangle, the legs are 10 and 24. What is the hypotenuse?

- (a) 26
- (b) 25
- (c) 30
- (d) 34

13. If the length of one leg of a right triangle is 8 and the length of the hypotenuse is 10, find the length of the other leg.

- (a) 6
- (b) 7
- (c) 9

(d) 5

14. Solve for x in a right triangle with legs 9 and 12. Find the hypotenuse.
(Grid-in Question: Answer in the grid as a number.)
15. Find the value of the hypotenuse in a right triangle with legs of lengths 6 and 8.
(Grid-in Question: Answer in the grid as a number.)
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Answer Key

1. (a) 10
2. (a) 8
3. (a) Yes, by the Pythagorean theorem
4. (a) 25
5. (a) 15
6. (a) 5
7. (a) 24
8. (a) 36
9. (a) 25
10. (a) 60
11. (a) Yes, the Pythagorean theorem holds.
12. (a) 26
13. (a) 6
14. 15 (Grid-in answer)
15. 10 (Grid-in answer)

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