

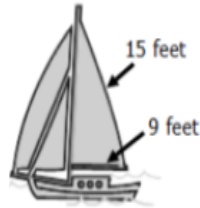
Converse of Pythagorean Theorem (8.G.B.6) & Pythagorean Theorem (8.G.B.7)

1. Television sizes are measured on the diagonal. Tony's television length is 42 inches, and the width is 31 inches. What is the diagonal measurement of Tony's television, to the *nearest* inch?

- A 50 inches
- B 51 inches
- C 52 inches
- D 53 inches

2.

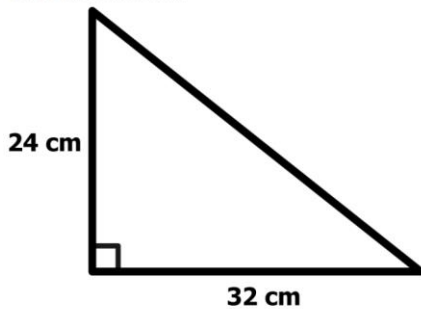
A diagram of a sailboat is shown. The sail on the boat is in the shape of a right triangle.



Using the dimensions in the diagram, what is the area of the sail?

- A 144 ft<sup>2</sup>
- B 108 ft<sup>2</sup>
- C 54 ft<sup>2</sup>
- D 12 ft<sup>2</sup>

The right triangle has the measurements shown.



What is the length of the hypotenuse of the triangle?

- A 25 cm
- B 30 cm
- C 40 cm
- D 56 cm

4. The Pythagorean theorem states that the sum of the squares of the legs of a right triangle is equal to the square of the hypotenuse. Consider a right triangle with legs that measure 6 cm and 7 cm. The steps shown can be used to determine the measure of the hypotenuse ( $c$ ).

$$6^2 + 7^2 = c^2$$

$$36 + 49 = c^2$$

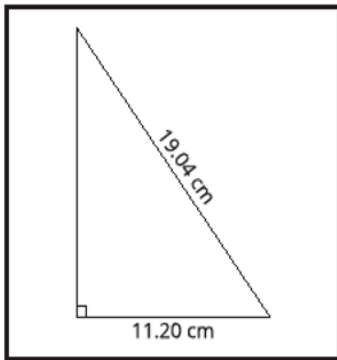
$$85 = c^2$$

What is the final step?

- A Subtract 85 cm<sup>2</sup> from both sides of the equation.
- B Take the square root of both sides of the equation.
- C Square both sides of the equation.
- D Divide both sides of the equation by  $c^2$ .

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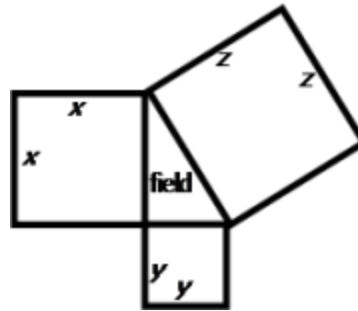
13. A right triangle is shown.



What is the missing length? Round the answer to the nearest hundredth.

- Ⓐ 5.50
- Ⓑ 7.84
- Ⓒ 15.40
- Ⓓ 22.09

A triangular field is bounded by three properties. Each property is square. Which equation represents the relationship between the three sides of the triangular field?



- A  $x + y = z$
- B  $x^2 + y^2 = z^2$
- C  $x + y + z = 1$
- D  $x^2 + y^2 + z^2 = 1$

The lengths of the sides of 3 different triangles are given, where  $x$  is an integer.

**Triangle 1:** 5, 13,  $x$   
**Triangle 2:** 9, 15,  $x$   
**Triangle 3:** 16, 20,  $x$

What is the value of the missing length ( $x$ ) that makes all 3 triangles right triangles?

- A 10
- B 12
- C 14
- D 24

Jerry drew a figure on the board claiming that it was a right triangle. What side lengths of the figure would show that Jerry is correct?

- A 17, 18, 19
- B 61, 90, 109
- C 39, 52, 65
- D 4, 5, 6