

## MATC9 Ch2.2 Key Concepts 2 Area of a Right Triangle Worked Example

**Example:** Find the area of the triangle shown.

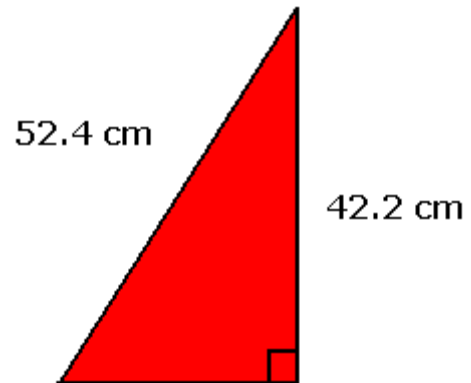
**Solution:** Use the Pythagorean theorem to find the length of the unknown side.

$$\begin{aligned}52.4^2 &= 42.2^2 + b^2 \\ b^2 &= 52.4^2 - 42.2^2 \\ &= 964.92 \\ b &= 31.1 \text{ cm}\end{aligned}$$

Then, use the formula  $A = \frac{1}{2}bh$ .

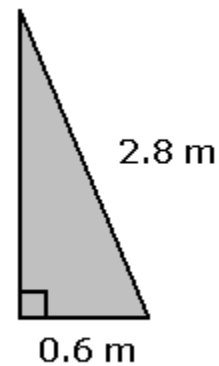
$$\begin{aligned}A &= \frac{1}{2} \times 31.1 \times 42.2 \\ &= 656.2 \text{ cm}^2\end{aligned}$$

The area is  $656.2 \text{ cm}^2$ .



**Practice:**

1. A triangular window for an A-frame cottage was designed as shown. Find the area of the window.



2. Basiruddin made a bracket for his motorcycle in the shape of a right-angled isosceles triangle with a hypotenuse of 12.4 cm. Find the area of the bracket.

Answers: 1.  $0.81 \text{ m}^2$  2.  $38.8 \text{ cm}^2$