# Area of Triangles

# Recap -Area of Rectangles and Squares

Calculate the area of these shapes.

10cm

6cm

7cm

4.5cm
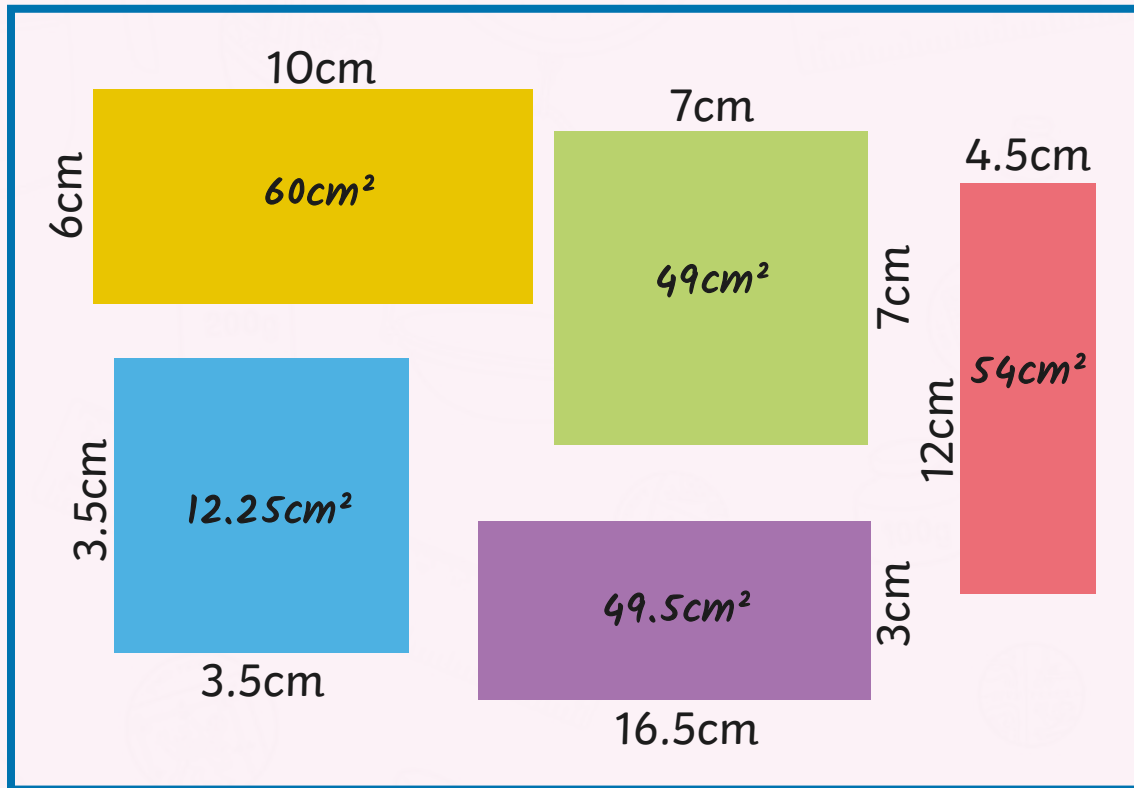
7cm

12cm

3.5cm

3cm

3.5cm

16.5cm

S P A C E

# Area of Rectangles and Squares

Calculate the area of these shapes. Order the shapes from smallest to largest area to spell a word connected to this topic.

10cm

6cm

60cm²

7cm

7cm

49cm²

4.5cm

12cm

54cm²

3.5cm

12.25cm²

3.5cm

49.5cm²

3cm

16.5cm

S P A

# How to Calculate the Area of a Right-Angled Triangle

To calculate the area of a right-angled triangle, multiply the base by the height and divide by 2.

5cm

6cm
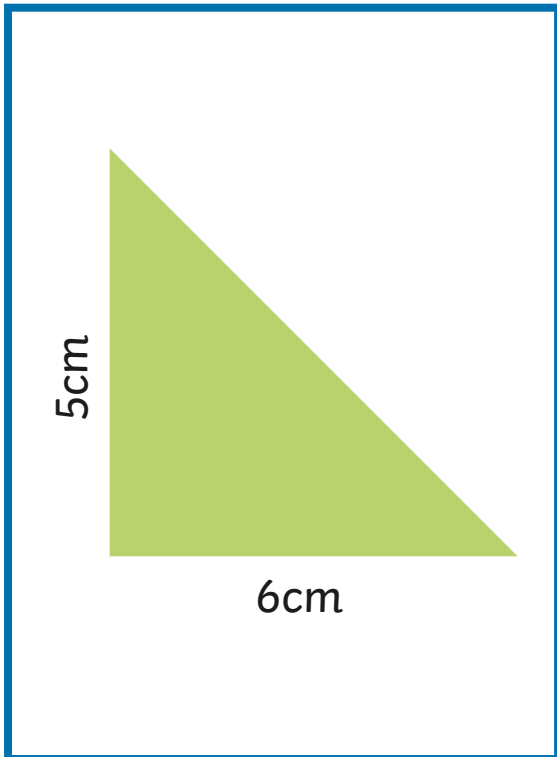
The base multiplied by the height is 6cm × 5cm = **30cm²**

30cm² ÷ 2 = **15cm²**

The area of this triangle is **15cm²**.

You might see it written like this $\frac{1}{2}$ **(b × h)**, like this $\frac{\underline{b \times h}}{2}$, or like this **b × h ÷ 2**.

They all mean the same thing and give the same answer.

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# How to Calculate the Area of a Right-Angled Triangle

But why is (b × h) ÷ 2 the formula to calculate the area of a right-angled triangle?
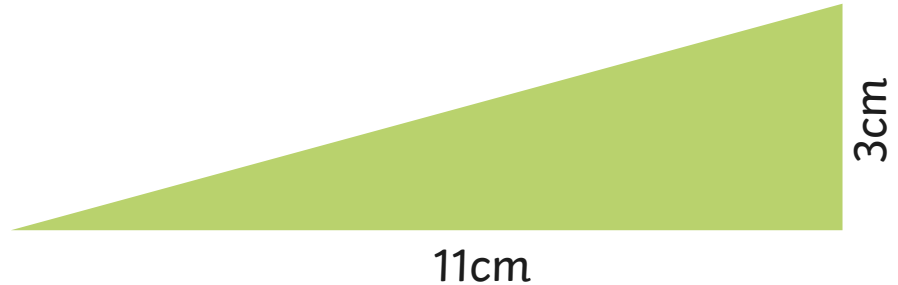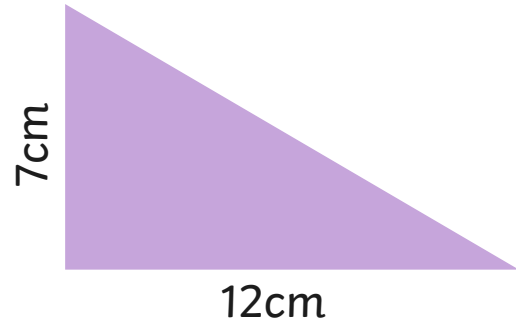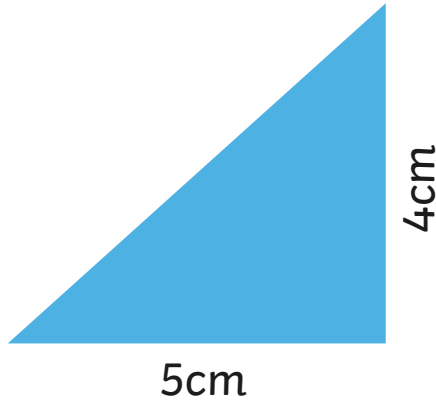
5cm

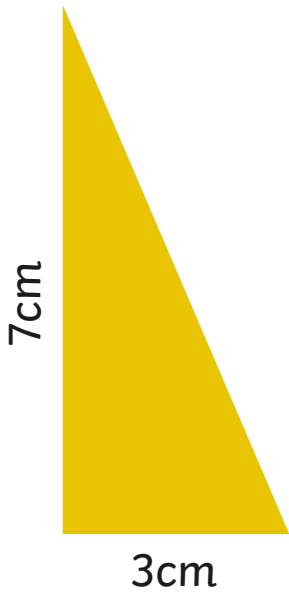6cm
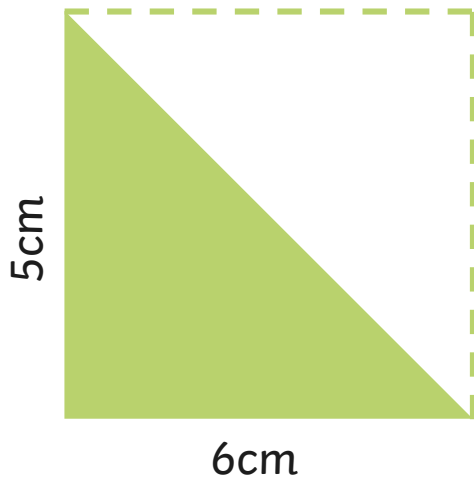
Let's extend this triangle to make a rectangle.

The area of the rectangle is 6cm × 5cm = **30cm²**.

The area of the triangle is half of this: (6cm × 5cm) ÷ 2 = **15cm²**

# Find the Area of Right-Angled Triangles

Find the area of these right-angled triangles:

7cm

3cm

4cm

5cm

7cm

12cm

3cm

11cm

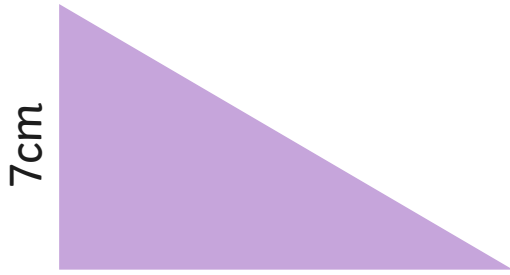# Find the Area of Right-Angled Triangles

Find the area of these right-angled triangles:

7cm

3cm

Area = 10.5cm²

4cm

5cm

Area = 10cm²

7cm

12cm

Area = 42cm²

3cm
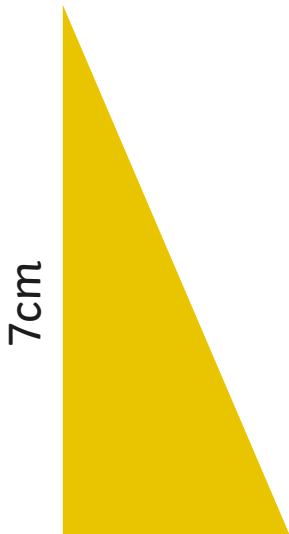
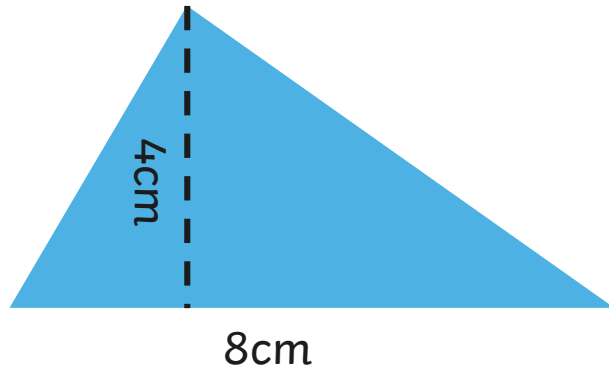11cm

Area = 16.5cm²

# How to Calculate the Area of Other Triangles

The area of this scalene triangle is 16cm².
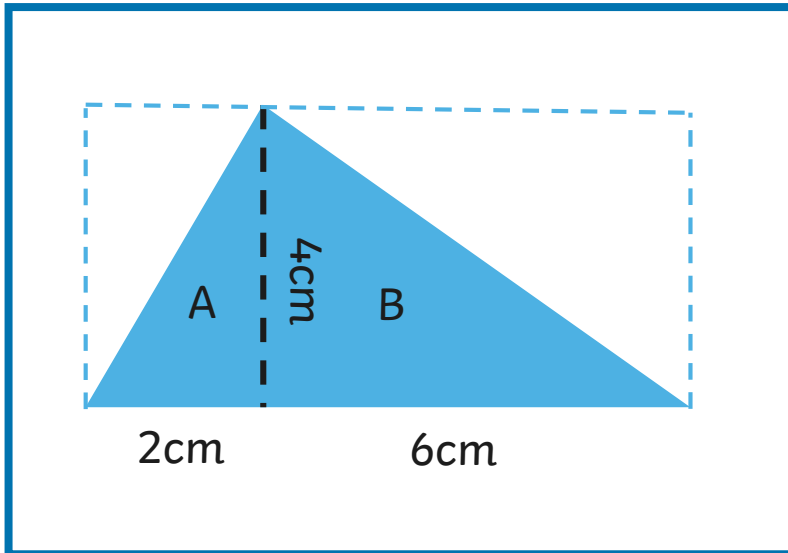Does the same formula work?
Try it. **(b × h) ÷ 2**

4cm

8cm

Base 8cm × height 4cm = **32 cm**

32cm ÷ 2 = **16cm²**

Yes, the same formula works.
Let's find out why.

# How to Calculate the Area of Other Triangles

Let's consider this scalene triangle as 2 right-angled triangles.

The area of triangle A
is (2cm × 4cm) ÷ 2 = **4cm²**

The area of triangle B
is (6cm × 4cm) ÷ 2 = **12cm²**

A + B = **16cm²**

The area of the whole triangle
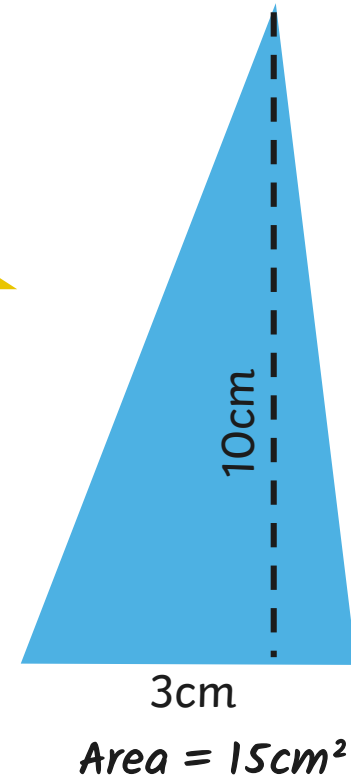is (8cm × 4cm) ÷ 2 = 16cm².
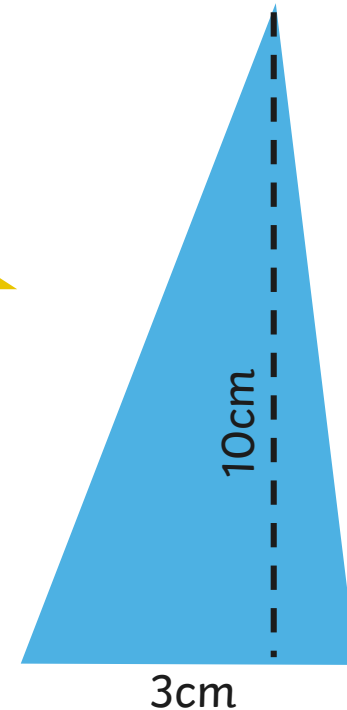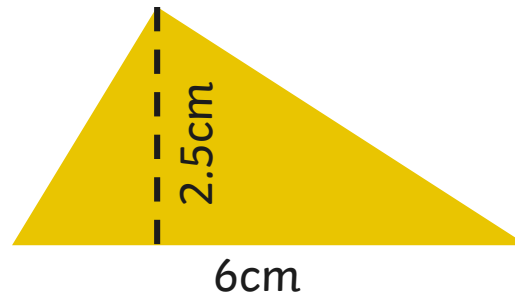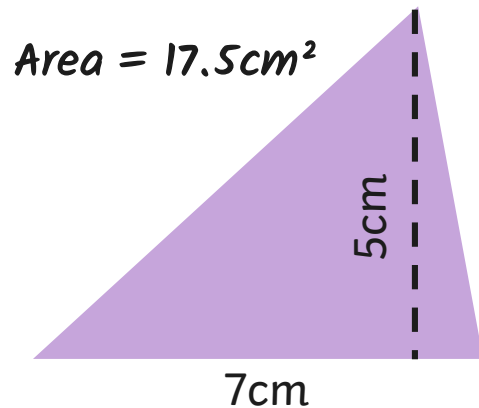
4cm

A

B

2cm

6cm

# Find the Area of Other Triangles

## Find the area of these triangles:

Area = 17.5cm²

5cm

7cm

2.5cm

6cm

2cm

15cm

10cm

3cm

# Find the Area of Other Triangles

## Find the area of these triangles:

Area = 17.5cm²

5cm

7cm

2.5cm

6cm

Area = 7.5cm²

2cm

15cm

Area = 15cm²

10cm

3cm

Area = 15cm²

# Find the Unmarked Side

If the area of this triangle is 30cm², calculate the length of the side marked with a question mark.
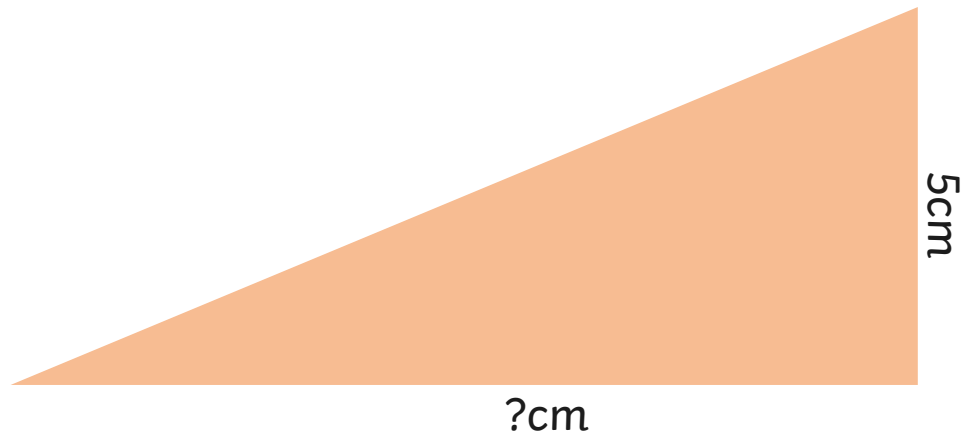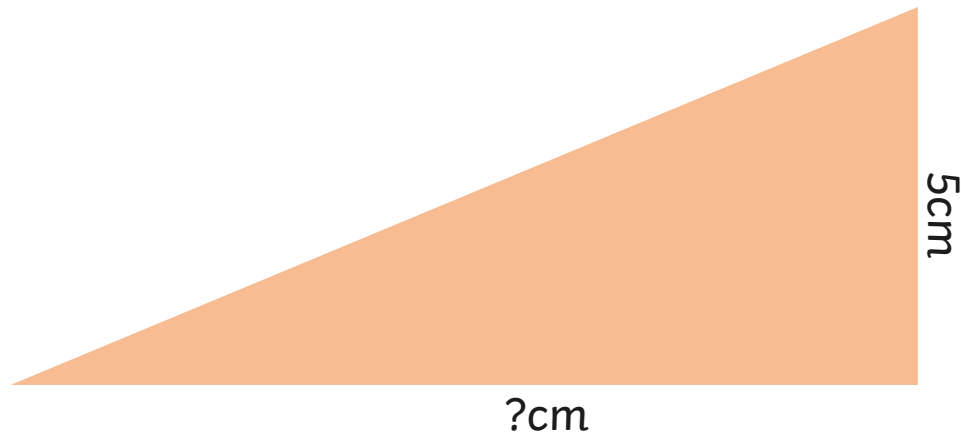


5cm

?cm

# Find the Unmarked Side

If the area of this triangle is 30cm², calculate the length of the side marked with a question mark.

5cm

?cm
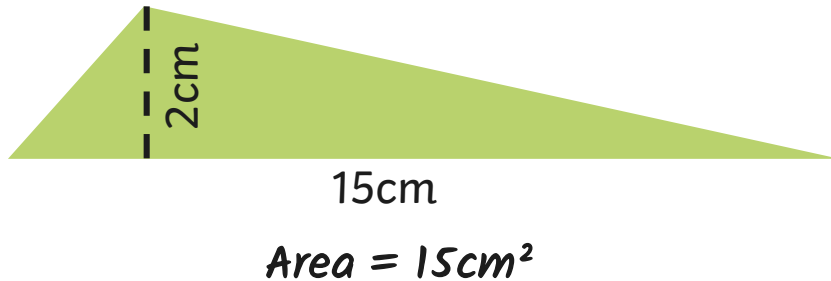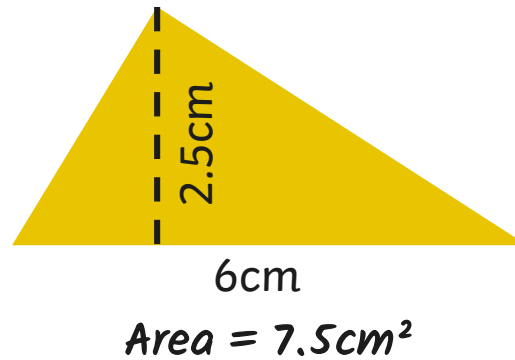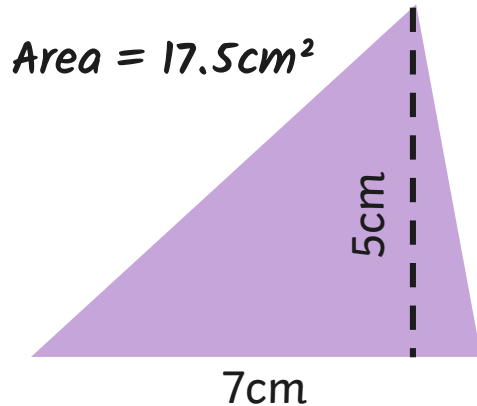
**Answer:**

30cm² × 2 = 60

60 ÷ 5cm = 12cm