

Mathematics

# Finding missing sides using sine and cosine for any angle

**Downloadable resource**

**Lesson 10 of 12**

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# Try this

Use the cards to create an equation and solve.

How many different solutions can you find?

$$\boxed{12} \quad \boxed{6} \quad \boxed{x}$$

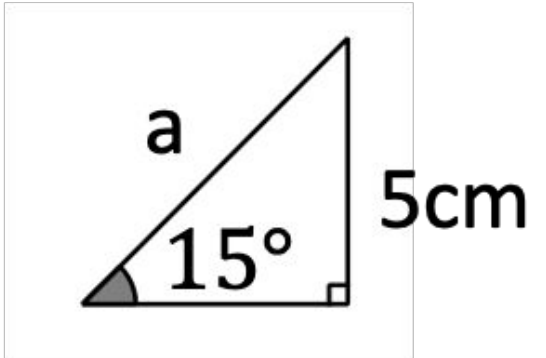
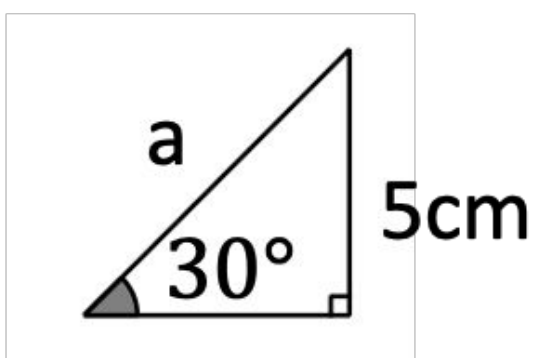
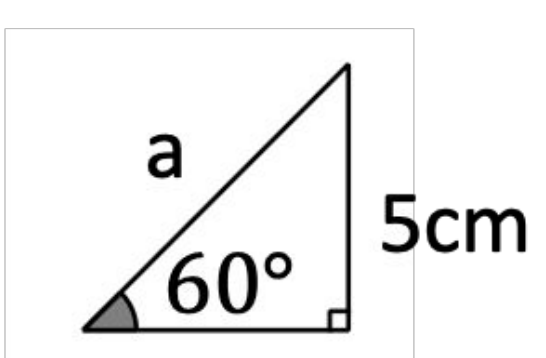
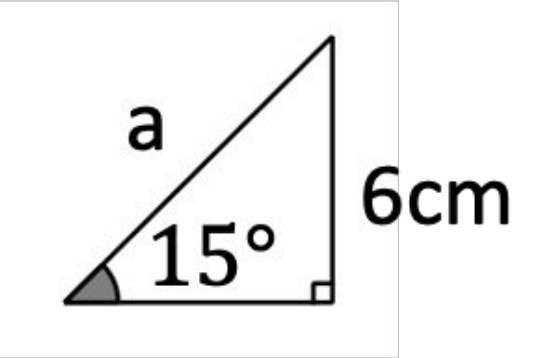
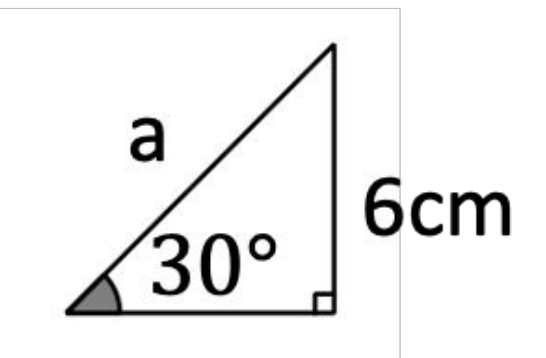
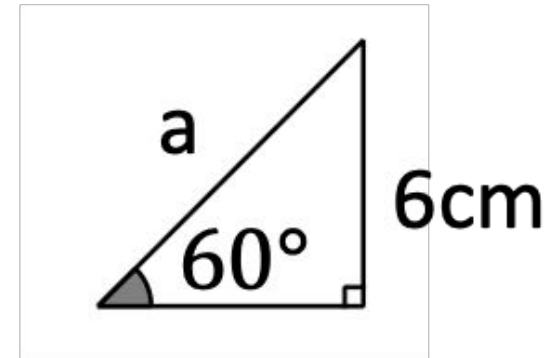
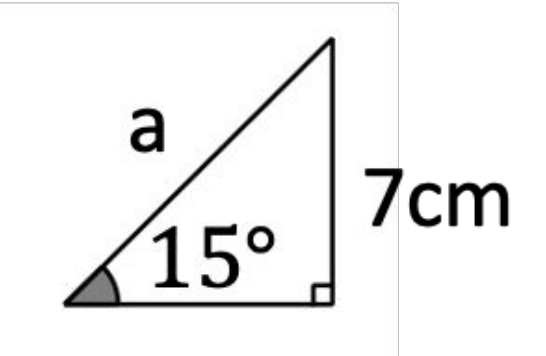
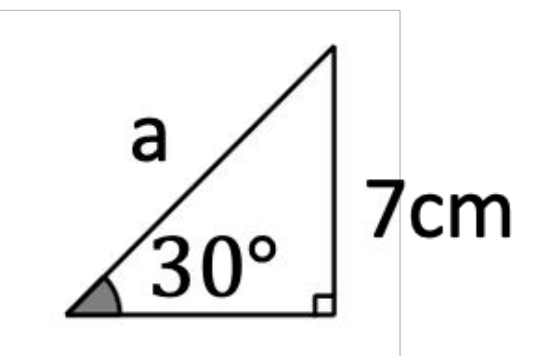
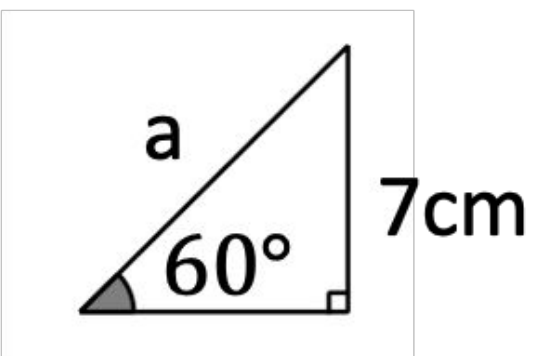
$$\boxed{\phantom{00}} = \frac{\boxed{\phantom{00}}}{\boxed{\phantom{00}}}$$



# Independent task

Calculate the length of each hypotenuse. Compare your answers and write down what you notice. What happens next? Make a prediction.

**Hint:**  
**Use a calculator.**

In each column, my answers are..

If I continued the rows, I would predict that...

I notice that if we increase the angle...

This is happening because...



# Explore

Are the statements sometimes true, never true, or always true?

The hypotenuse is longer than the opposite.

The opposite divided by the hypotenuse is equal to one.

Increasing the angle, decreases the length of the hypotenuse.

Increasing the length of the opposite, increases the length of the hypotenuse.

The opposite divided by the hypotenuse is less than one.

