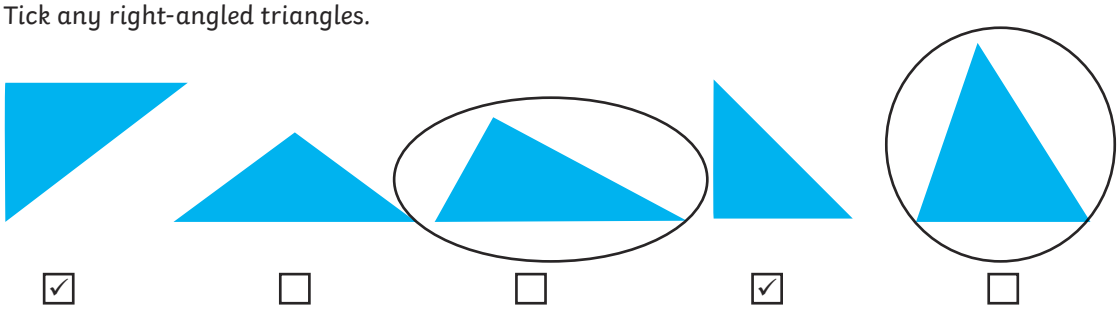
1) Circle any scalene triangles.
Tick any right-angled triangles.



☑ ☐ ☐ ☑ ☐

2) Name the type of triangle you have not circled or ticked.
isosceles

---

1) What are the differences between these two triangles?
One has a right angle; one has one side that is longer than the others; one has one side that is shorter than the others.

What is similar about them?
Both are isosceles triangles.

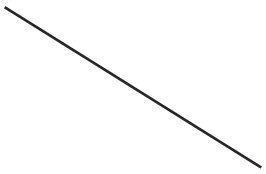
2) Tick the statements that are true:

- ☑ A scalene triangle never has equal length sides.
- ☐ An isosceles triangle can never have a right angle.
- ☐ An isosceles triangle has three equal angles.
- ☑ An equilateral triangle has three equal length sides.

Choose one of your true statements and prove it!
Multiple answers possible.

---

1) Here is a 4cm line:



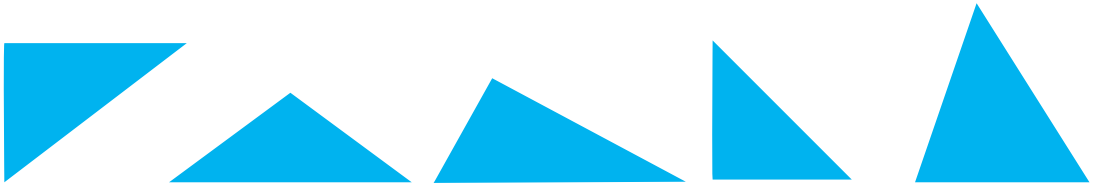
Use a pencil and a ruler to draw two more sides that would create an isosceles triangle. What are the lengths of your two new sides?
Multiple answers possible. Ensure that children's triangles have two equal sides and angles to within a reasonable degree of accuracy.

Without drawing two new sides, write the lengths of the two new sides needed to make an equilateral triangle.
4cm and 4cm

2) Investigate:
How many different isosceles triangles can you make where the lengths of the sides are whole numbers (not decimals) that total 12cm? Draw or make your triangles to prove it.
Only one triangle can be made, with one 2cm side and two equal sides of 5cm.

3) The longest side of a triangle must be less than the other two sides added together. Investigate if this is always true.
True, the longest side of a triangle is always shorter than the other two sides added together.

1) Circle any scalene triangles.
Tick any right-angled triangles.



☐ ☐ ☐ ☐ ☐

2) Name the type of triangle you have not circled or ticked.

_____

1) What are the differences between these two triangles?

_____

What is similar about them?

_____

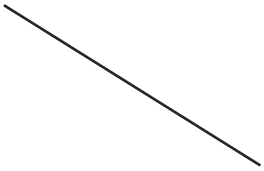
2) Tick the statements that are true:

- ☐ A scalene triangle never has equal length sides.
- ☐ An isosceles triangle can never have a right angle.
- ☐ An isosceles triangle has three equal angles.
- ☐ An equilateral triangle has three equal length sides.

Choose one of your true statements and prove it!

_____

1) Here is a 4cm line:



Use a pencil and a ruler to draw two more sides that would create an isosceles triangle.

What are the lengths of the two new sides?

_____ cm _____ cm

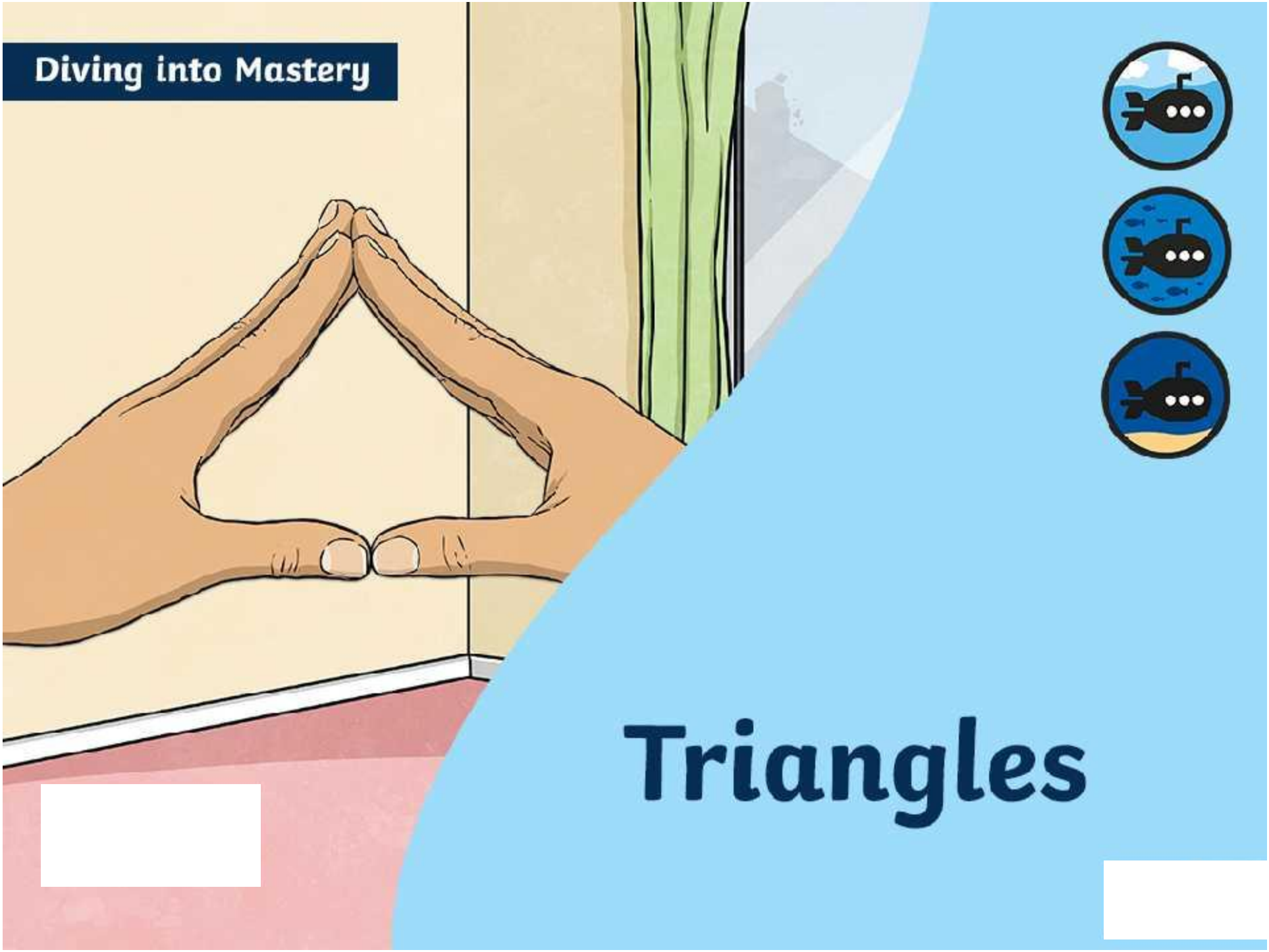
Without drawing two new sides, write the lengths of the two new sides needed to make an equilateral triangle.

_____ cm _____ cm

2) Investigate:
How many different isosceles triangles can you make where the lengths of the sides are whole numbers (not decimals) that total 12cm? Draw or make your triangles to prove it.

3) The longest side of a triangle must be less than the other two sides added together. Investigate if this is always true.

Diving into Mastery



Triangles

Diving into Mastery Guidance for Educators

Each activity sheet is split into three sections, diving, deeper and deepest, which are represented by the following icons:

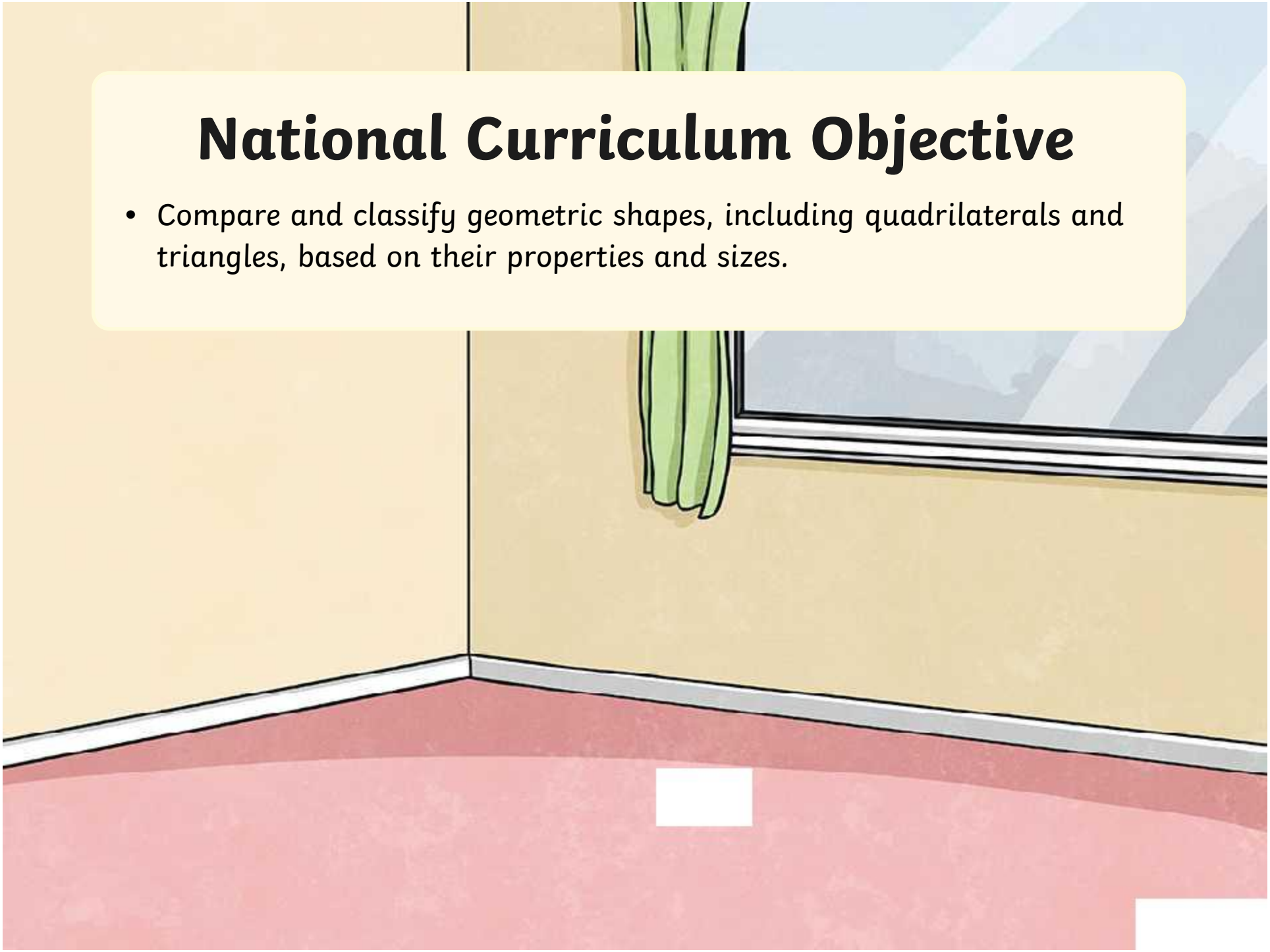
Diving

Deeper

Deepest

These carefully designed activities take your children through a learning journey, initially ensuring they are fluent with the key concept being taught; then applying this to a range of reasoning and problem-solving activities.

These sheets might not necessarily be used in a linear way. Some children might begin at the 'Deeper' section and in fact, others may 'dive straight in' to the 'Deepest' section if they have already mastered the skill and are applying this to show their depth of understanding.

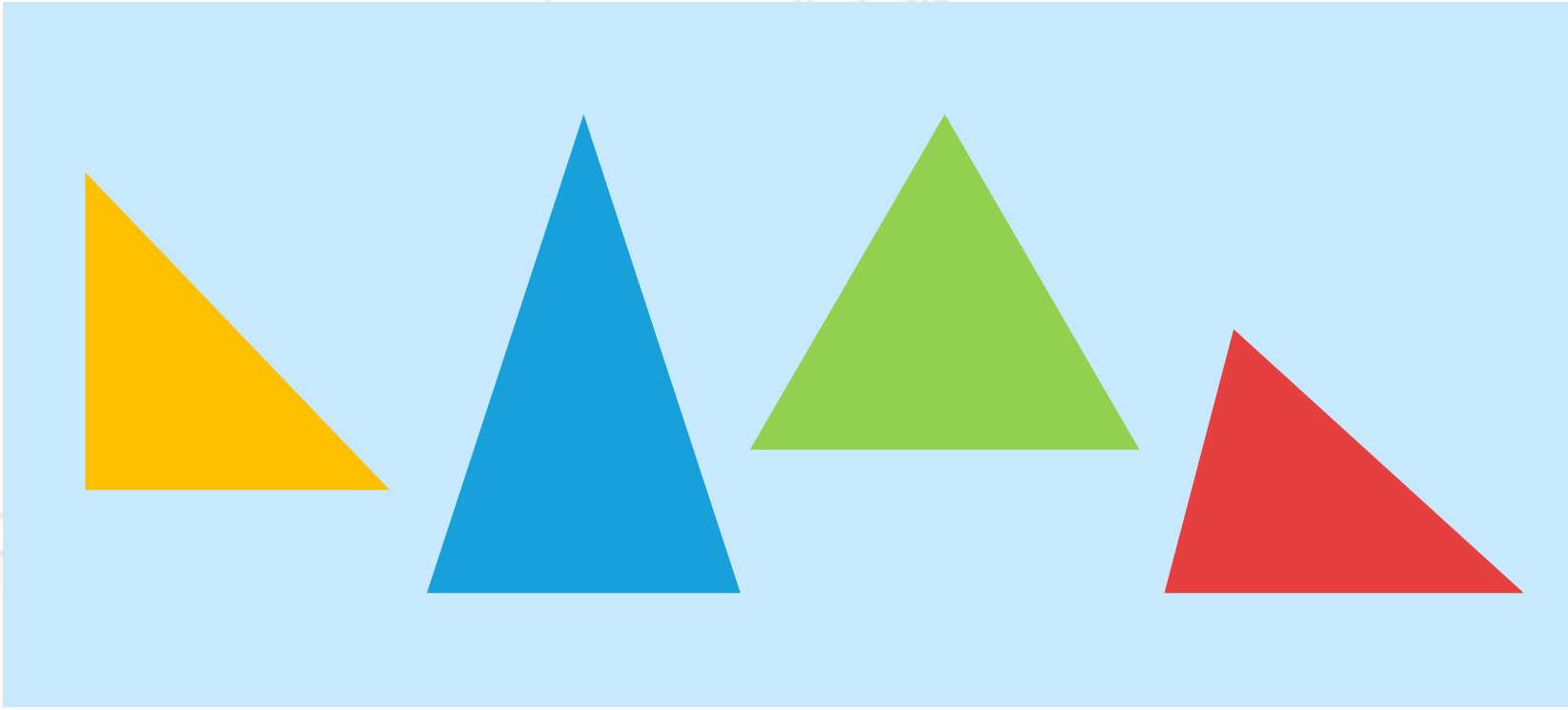


National Curriculum Objective

- Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes.

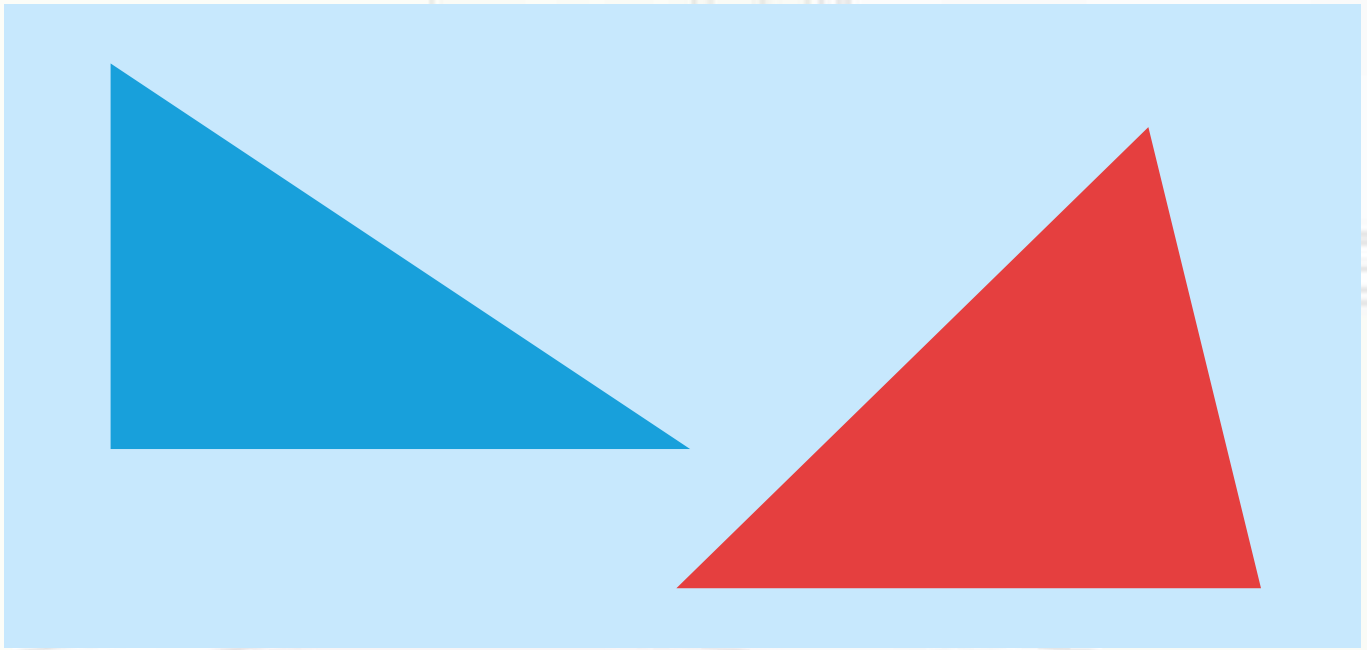
Triangles | **Diving**

Which triangle is equilateral?
Isosceles?
Scalene?
Right-angled?



Triangles | Diving

Name these triangles:

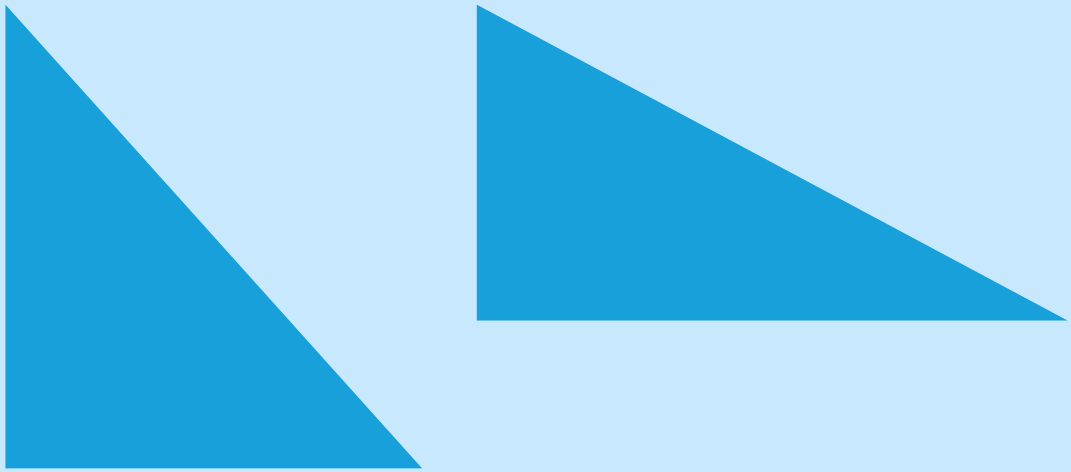


right-angled

scalene

Triangles **Deeper**

What do these triangles have in common?
What is different about them?



They are both right-angled triangles.
One is also an isosceles triangle.

Triangles | Deeper

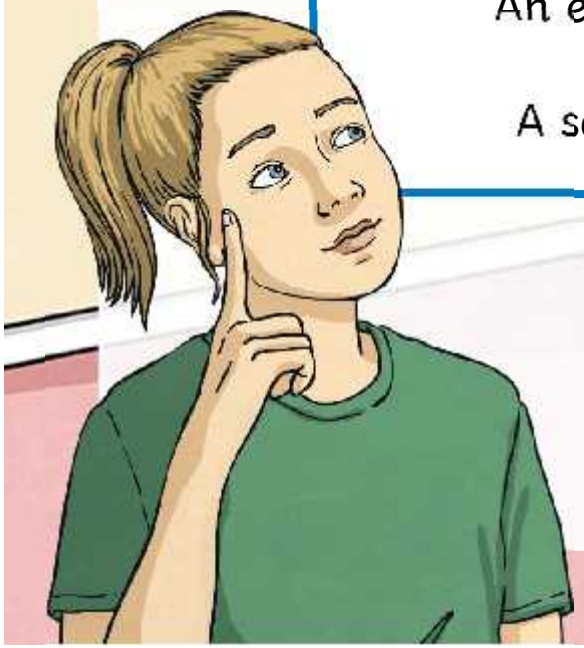
True or false?

A scalene triangle can have two equal sides. ✗

The right angle in a right-angled triangle can only be on the base of the triangle. ✗

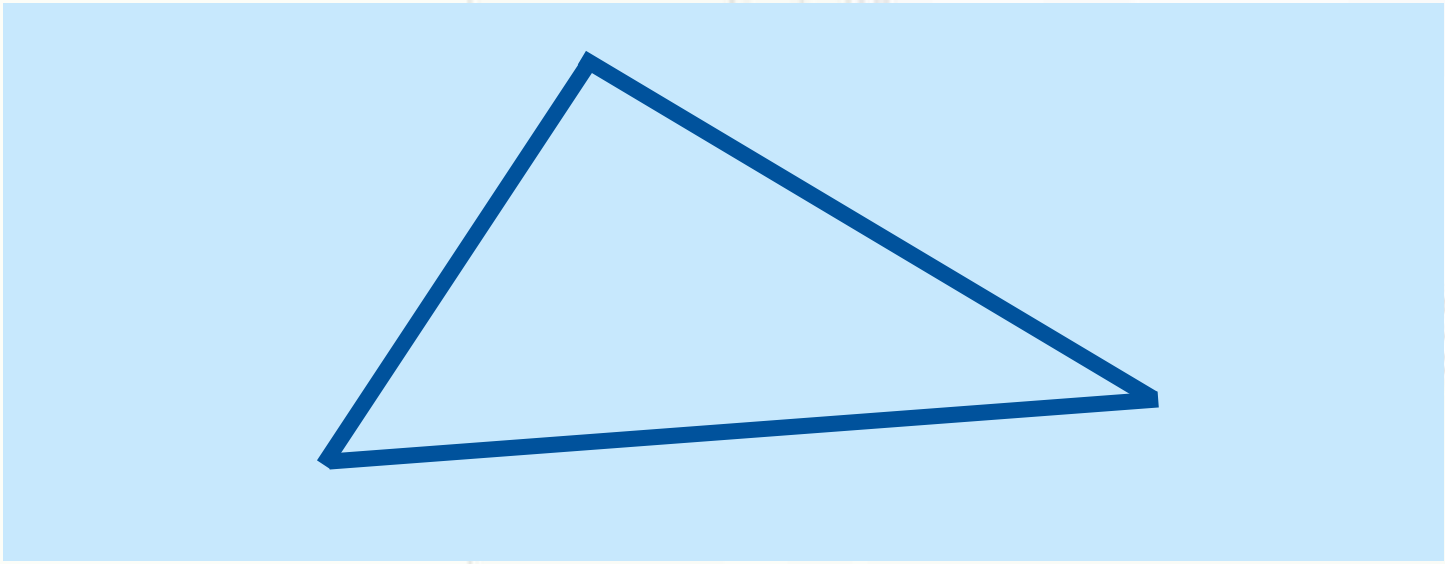
An equilateral triangle has all angles equal. ✓

A scalene triangle never has equal angles. ✓



Triangles **Deepest**

How could I draw two more sides to make a scalene triangle?

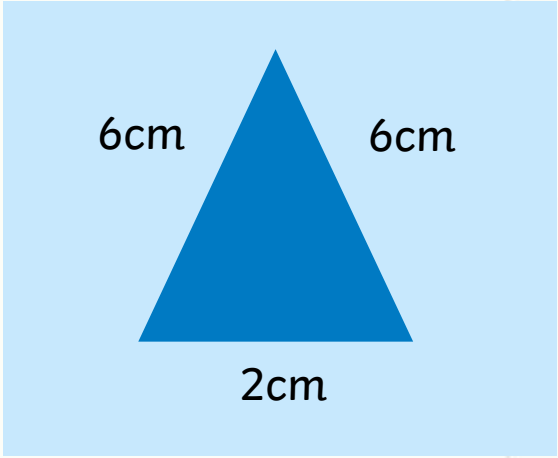


If this line was 6cm long and I used it as one of my equal length sides in an isosceles triangle, can you work out the length of one other side? How?

6cm! Isosceles triangles have two equal length sides.

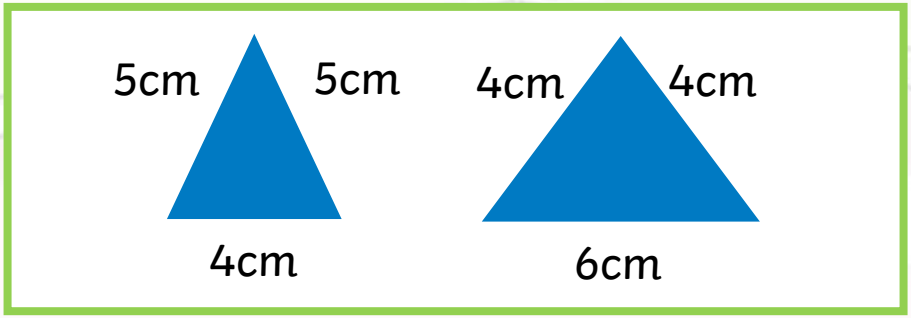
Triangles **Deepest**

If I draw an isosceles triangle with sides that are whole numbers and add up to 14cm, it has to have these measurements:



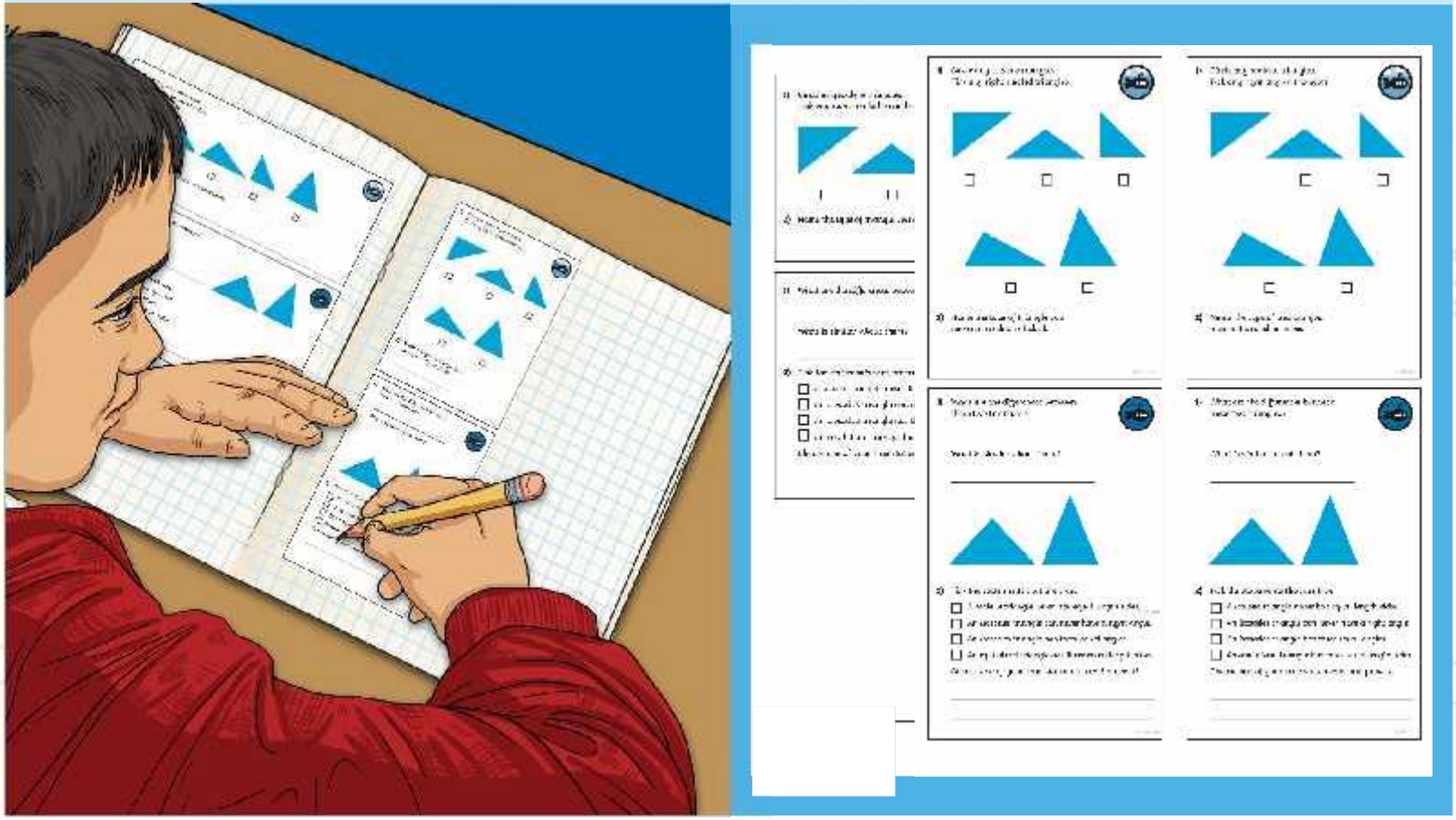
Is this correct?

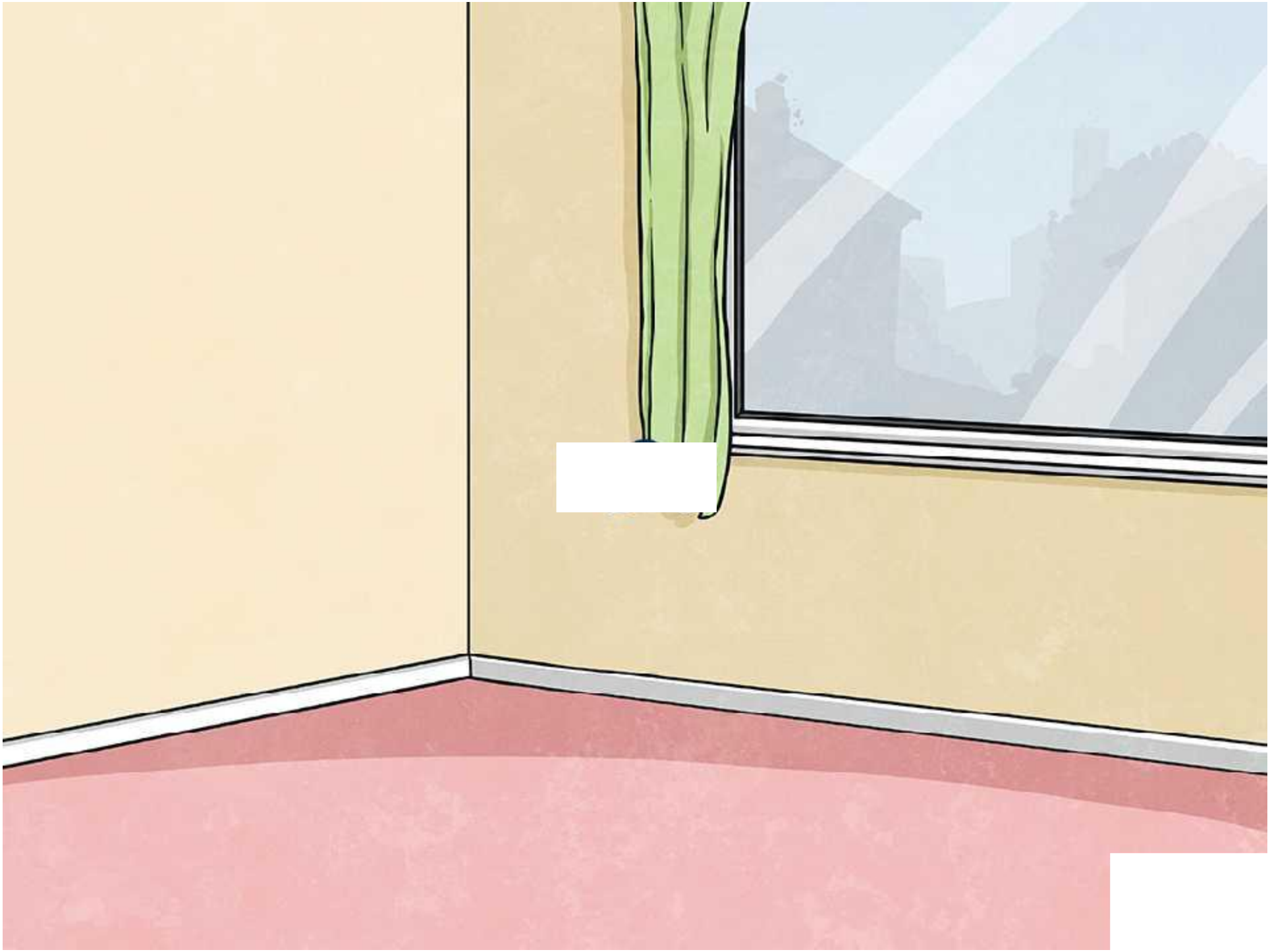
What other isosceles triangles could have sides which equal 14cm?



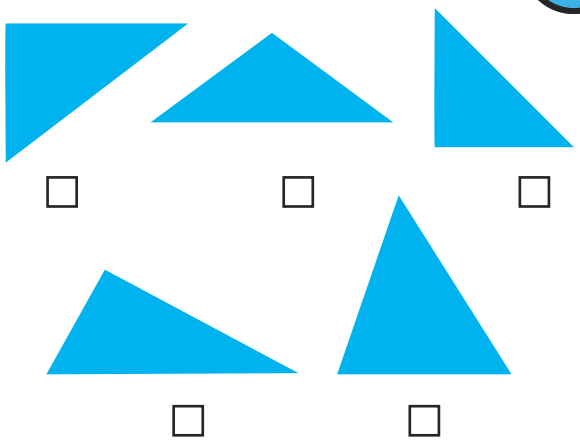
Triangles

Dive in by completing your own activity!





1) Circle any scalene triangles.
Tick any right-angled triangles.



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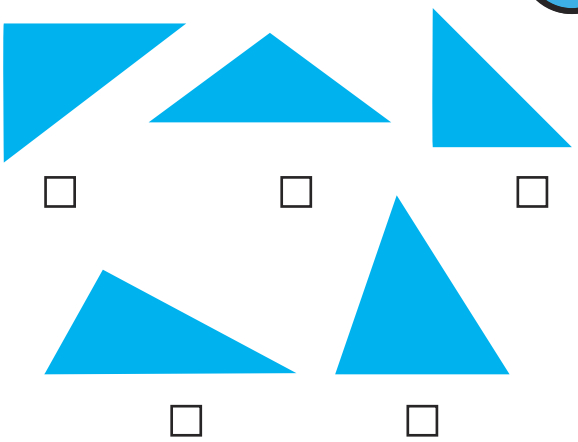

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1) Here is a 4cm line:

Copy it into your book using a pencil and ruler. Add two more sides to create an isosceles triangle. What are the lengths of the two new sides?

Without drawing two new sides, write the lengths of the two new sides needed to make an equilateral triangle.

2) Investigate:
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