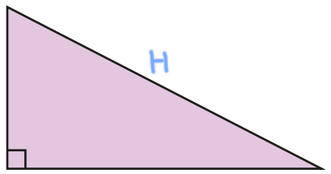
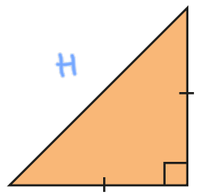
Work fluently with the hypotenuse, opposite and adjacent sides

1 Label the hypotenuse on the right-angled triangles.

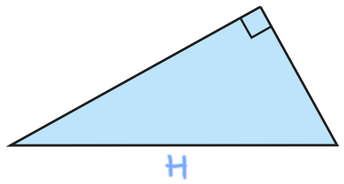
a)



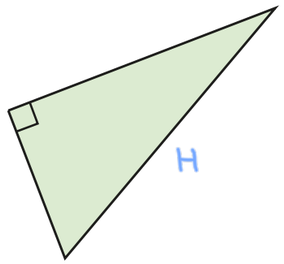
b)



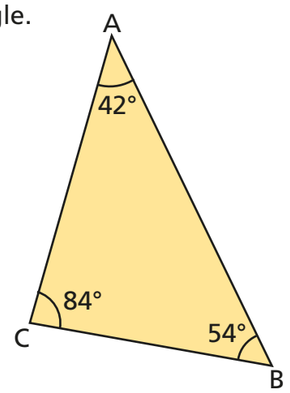
c)



d)



2 Annie is labelling this triangle.



She says, "AB is the hypotenuse because it is opposite the largest angle."

Do you agree with Annie? No

Explain your answer.

The triangle isn't right angled so it doesn't have a hypotenuse.

3 Decide whether each statement is true or false.

The hypotenuse is the largest side of any triangle. false

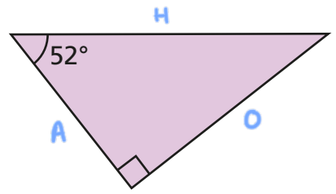
Only right-angled triangles have a hypotenuse. true

The hypotenuse of a right-angled triangle is always opposite the right angle. true

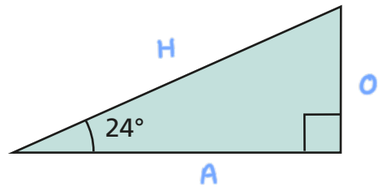
Discuss your answers with a partner.

4 Label the opposite, adjacent and hypotenuse on the right-angled triangles.

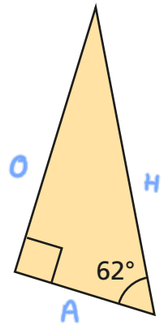
a)



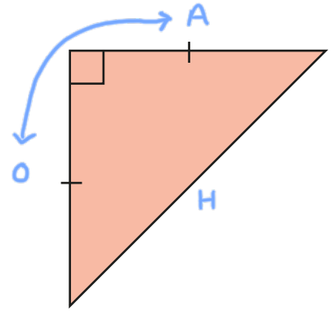
b)



c)



d)



How was it possible to label the triangle in part d) given that the only angle labelled was the right angle?

O and A can be either way round because the triangle is isosceles so the other two angles are equal.

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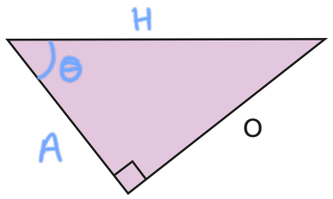
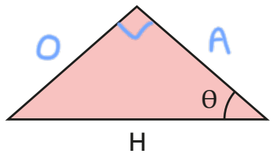
5 Complete the labelling of the right-angled triangles to include:

- right angle (square notation)
- given angle – θ
- hypotenuse – H
- adjacent – A
- opposite – O

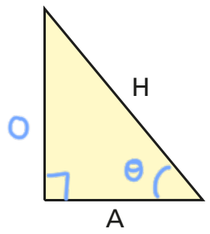
a)



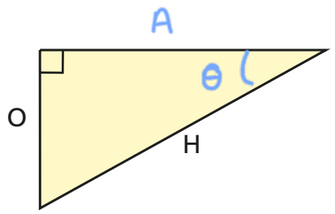
b)



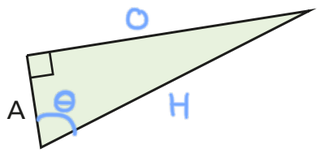
c)



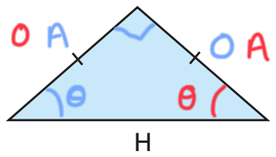
d)



e)



f)

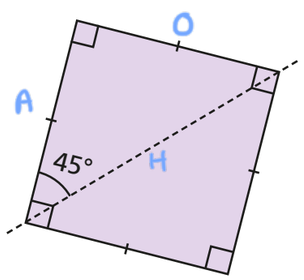


(either is fine)

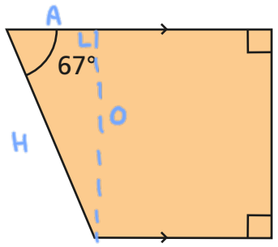
6 Identify right-angled triangles in the shapes that include the given angle.

Label the hypotenuse, adjacent and opposite sides of each triangle.

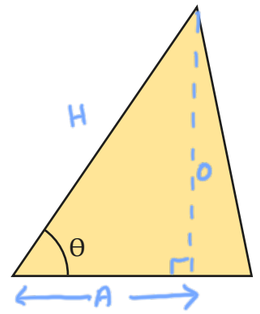
a)



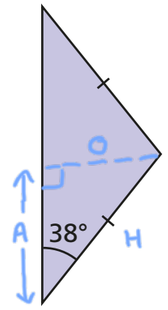
b)



c)

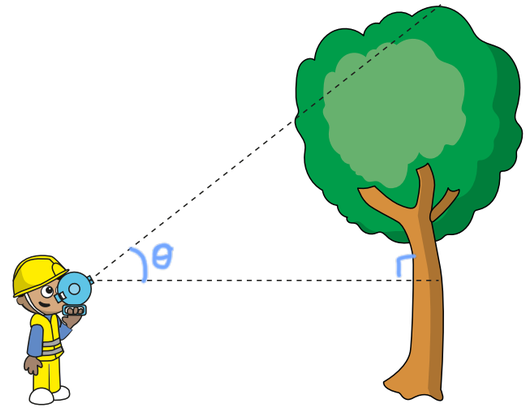


d)



7 Mr Khan is finding the height of a tree using a clinometer.

A clinometer measures the angle between the horizontal and the top of a large object or building.



Complete the sentences to describe the right-angled triangle used to help calculate the height.

The distance between the clinometer and the top of the tree is the hypotenuse

The vertical distance between the level of the clinometer and the top of the tree is the opposite

The adjacent side is the horizontal distance between the clinometer and the tree.

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