# Checkpoint Task – Trigonometry

# What rule should I use? – Student sheets

## Activity 1

Look at the following diagram and the related equations in Part 1 and Part 2 below. State whether each one is true or false. If an equation is false, write a correct version of it. Then answer Part 3.

*A*

*B*

*C*

*a*

*b*

*c*

*x*

*y*

*h*

*D*

**Part 1**

**(a)** sin *C* = 

**(b)** tan *A* = 

**(c)** *a*2 = *h*2 + *y*2

**(d)** 

**(e) **

**(f)** *h*2 = *c*2 + *x*2

**(g)** (*x* + *y*)2 = *a*2 + *c*2 – 2*ac* cos *C*

**(h)** 

**Part 2**

Area of triangle *ABC* = *cy* sin *A*

**Part 3**

There are three triangles in the diagram on the previous page, *ABC*, *ABD* and *BCD*. For each triangle write a different trigonometric equation. How many different equations are there? Can you write one that your partner has not written?

## Activity 2

Use the diagram below to answer the following parts.

*A*

*B*

*C*

15

*a*

27

42°

**Part 1**

Use the sine rule to complete these equations.

**(a)** 

**(b)** 

**Part 2**

Use the cosine rule to complete these equations.

**(a)** 272 = 152….............................

**(b) **

**Part 3**

**(a)** Can you use SOHCAHTOA on this triangle as it stands? Explain your answer.

**(b)** Can you use Pythagoras’ theorem on this triangle as it stands? Explain your answer.

**Part 4**

**(a)** Can you write a different version of the cosine rule about this triangle that will only involve one unknown?

**(b)** Can you write a different version of the sine rule about this triangle that will only involve one unknown? Explain your answer.

## Activity 3

Use the diagram below to answer the following parts.

*C*

*x*

*x*

27

34°

*A*

*B*

**Part 1**

**(a)** Can you use SOHCAHTOA on this triangle as it stands? Explain your answer.

**(b)** Can you use Pythagoras’ theorem on this triangle as it stands? Explain your answer.

If your answer is “No” to either **(a)** or **(b)**, describe what you have to do to this triangle to be able to use that technique.

**Part 2**

Write one equation using the sine rule and one using the cosine rule that can be used to find *x*.

**Part 3**

Write an expression for the area of this triangle.

**Part 4**

Can you work out the values of any of the unknown angles or sides?

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