

GCSE MATHEMATICS

Higher tier

Geometry and measures

Topic test – Congruent triangles

v1.0

Name _____

Materials

For this paper you must have:

- Mathematical instruments
- A calculator.



Information

- The marks for questions are shown in brackets.
- The maximum mark for this paper is 25.

Advice

- In all calculations, show clearly how you work out your answer.

For Teacher's Use	
Pages	Mark
2 - 3	
4 - 5	
6 - 7	
8 - 9	
TOTAL	

- 1 Which of these is **not** a condition for congruent triangles?
Circle the correct answer.

[1 mark]

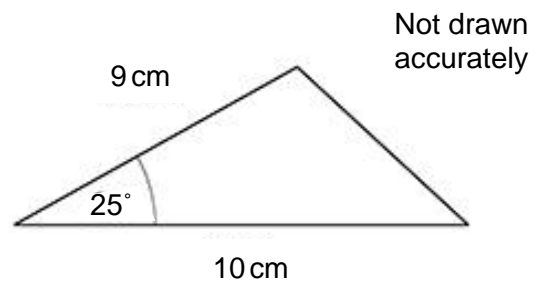
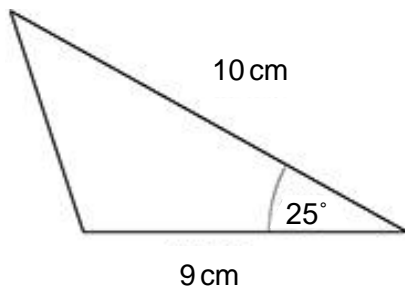
SSS

AAA

ASA

RHS

2

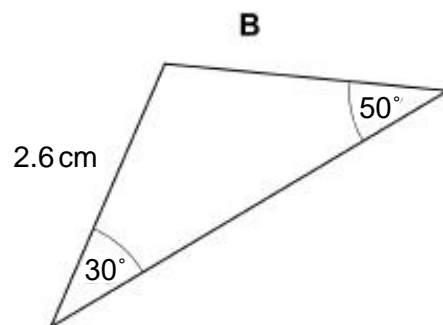
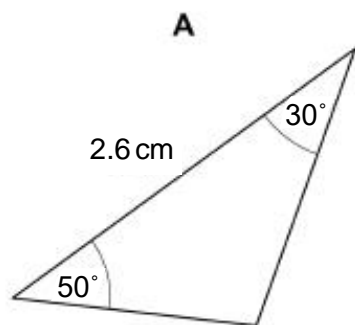
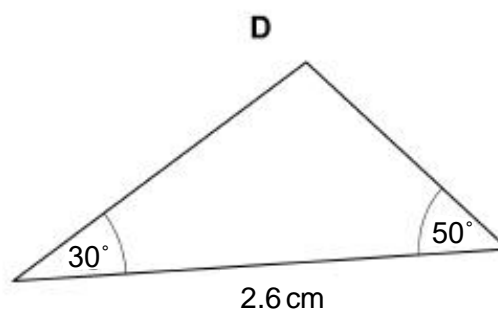
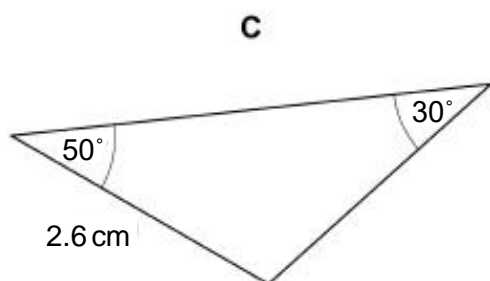


Give a reason why these triangles are congruent.

[1 mark]

3

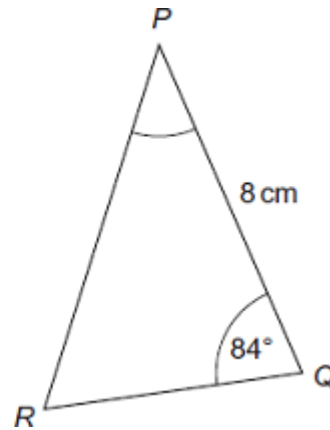
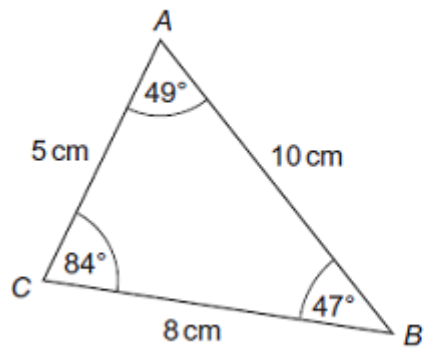
Here are four triangles.

Not drawn
accuratelyWhich **two** triangles are congruent?

[1 mark]

Answer _____

- 4 These two triangles are congruent.



Not drawn
accurately

- 4 (a) What is the size of angle P ?

[1 mark]

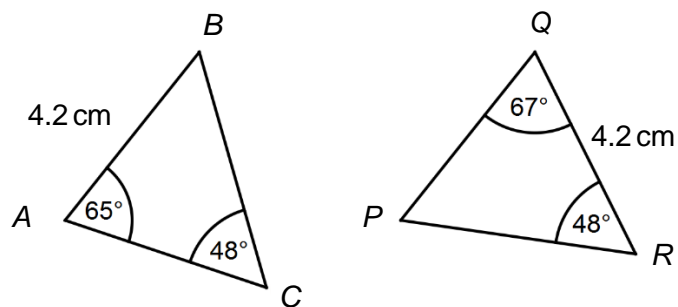
Answer _____

- 4 (b) What is the length of PR ?

[1 mark]

Answer _____

5



Not drawn
accurately

Are triangles ABC and PQR similar, congruent or neither?

Justify your answer.

[3 marks]

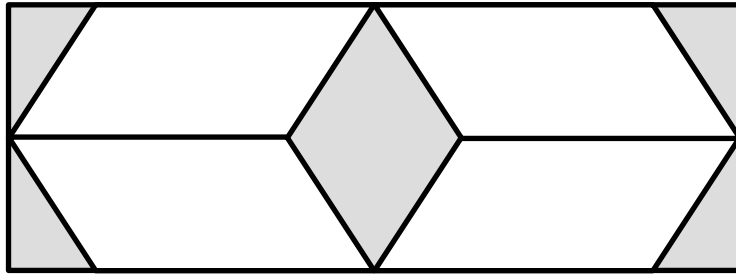
Answer _____

Turn over for the next question

Turn over ►

6

This shape is made from four congruent parallelograms placed inside a rectangle.

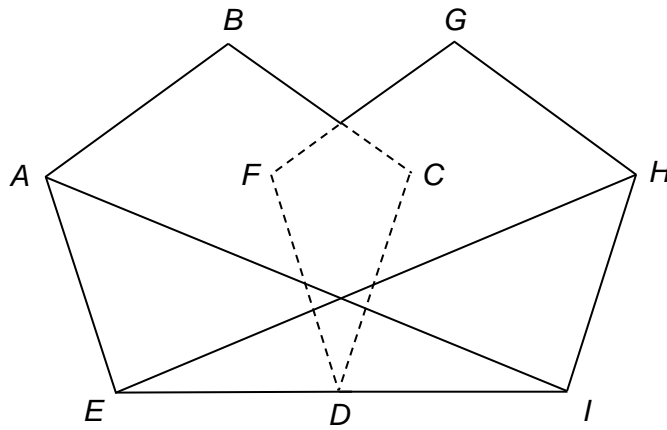


Tick whether the below statements are true, false or you cannot tell.

[4 marks]

	True	False	Cannot tell
The triangles are congruent.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
At least one of the triangles is isosceles.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The shape in the centre is a rhombus.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The shaded area is equal to the non-shaded area.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 7 Shapes $ABCDE$ and $DFGHI$ are congruent regular pentagons.



Not drawn
accurately

Prove that triangles AEI and EHI are congruent.

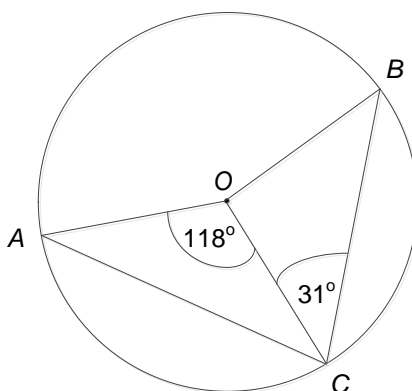
[5 marks]

Turn over for the next questions

8

O is the centre of the circle.

Not drawn
accurately



Prove that triangles OAC and OBC are congruent.

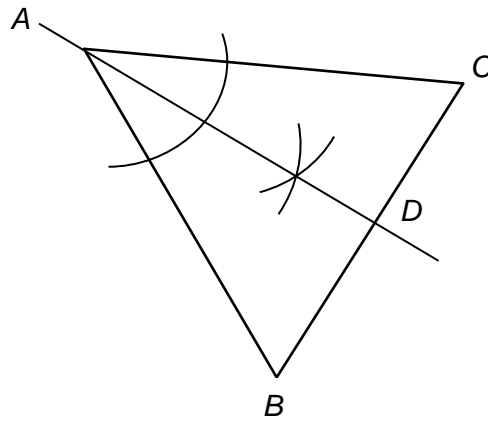
[4 marks]

9

ABC is an equilateral triangle.

Marim has bisected angle A , as shown below.

The bisecting line crosses the triangle again at point D .



Not drawn
accurately

Prove that triangles ABD and ACD are congruent.

[4 marks]

END OF QUESTIONS