

Congruence

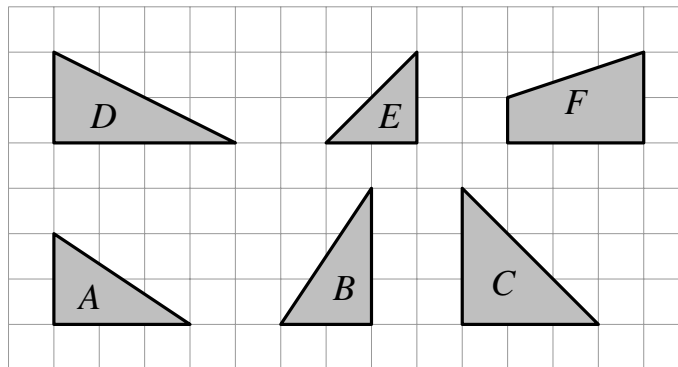
For AQA GCSE Mathematics (8300) • Foundation tier

Name _____

Total marks: **20**

Answer **all** questions in the spaces provided. Show your working: marks are given for correct method. Diagrams are not drawn accurately, except on the grids.

1 Here are six shapes on a grid.

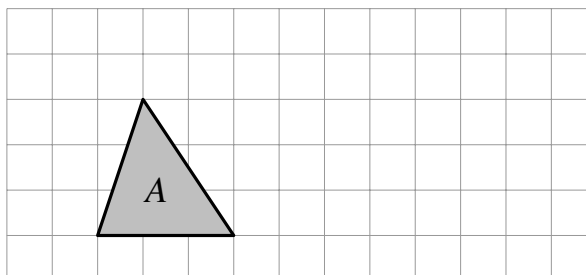


Which **two** shapes are congruent?

[1 mark]

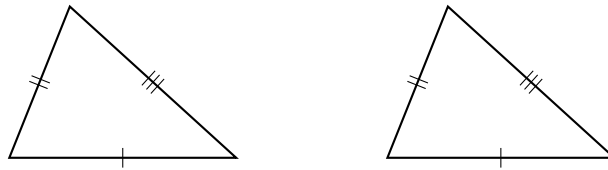
Answer _____ and _____

2 On the grid, draw a triangle congruent to triangle *A* but in a different position.



[1 mark]

- 3 Here are two triangles.



Not drawn accurately

The marks show which sides are equal.

Circle the condition that shows these triangles are congruent.

[1 mark]

SSS

SAS

ASA

RHS

- 4 Triangles P and Q both have angles of 55° and 75°
In both triangles, the side between these two angles is 8 cm long.
Circle the reason why triangles P and Q are congruent.

[1 mark]

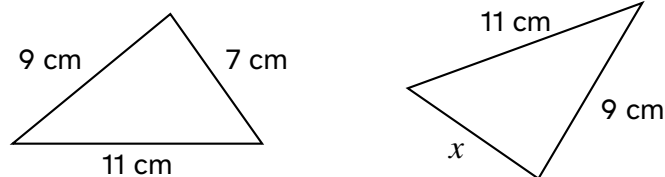
SSS

SAS

ASA

RHS

- 5 Here are two triangles.



Not drawn accurately

These two triangles are congruent.

Write down the value of x .

[1 mark]

$x =$ _____ cm

- 6** Triangles ABC and DEF are congruent.
 $AB = DE = 7$ cm, $BC = EF = 9$ cm and $AC = 11$ cm
Angle $ABC = 48^\circ$

(a) Write down the size of angle DEF .

[1 mark]

Answer _____ degrees

(b) Write down the length of DF .

[1 mark]

Answer _____ cm

- 7** (a) Triangle P has sides 5 cm and 7 cm with an angle of 40° between them.
Triangle Q has sides 7 cm and 5 cm with an angle of 40° between them.
Are the triangles congruent? Tick a box.
Give a reason for your answer.

[1 mark]

☐

Yes

☐

No

- (b) Triangles R and S are both right-angled.
Each has a hypotenuse of 13 cm and another side of 5 cm.
Are the triangles congruent? Tick a box.
Give a reason for your answer.

[1 mark]

☐

Yes

☐

No

- 8 Which **two** of the triangles B , C , D and E are congruent to triangle A ?

Triangle	Information
A	sides 6 cm, 8 cm, 10 cm
B	sides 8 cm, 10 cm, 6 cm
C	sides 6 cm, 8 cm, angle between them 60°
D	sides 6 cm and 8 cm with a right angle between them
E	angles 37° , 53° , 90°

[2 marks]

Answer _____ and _____

- 9 Here is some information about three pairs of triangles.

For each pair, tick the condition that proves the triangles are congruent.
If there is not enough information to be sure, tick **Not enough**.

[3 marks]

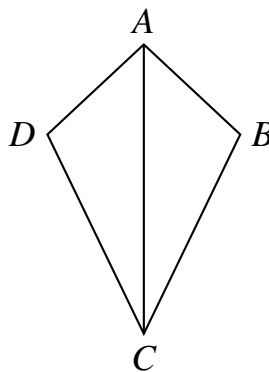
	SAS	ASA	RHS	Not enough
Both triangles have a right angle, a hypotenuse of 10 cm and another side of 6 cm	☐	☐	☐	☐
Both triangles have sides of 4 cm and 9 cm with an angle of 35° between them	☐	☐	☐	☐
Both triangles have one side of 5 cm and one side of 12 cm	☐	☐	☐	☐

- 10** Sam says,
 'If two triangles have the same three angles, they must be congruent.'

Explain why Sam is wrong.

[1 mark]

- 11** $ABCD$ is a kite.
 $AB = AD$ and $CB = CD$
 The diagonal AC splits the kite into two triangles.



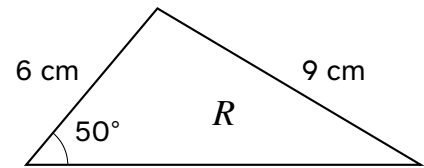
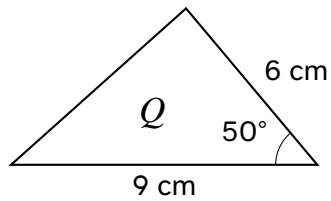
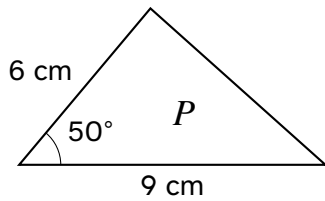
Not drawn accurately

For each statement, tick the correct box.

[3 marks]

	Must be true	Could be true	Must be false
Triangle ABC is congruent to triangle ADC	☐	☐	☐
Triangle ABC is isosceles	☐	☐	☐
The perimeter of triangle ABC is greater than the perimeter of triangle ADC	☐	☐	☐

12 Here are three triangles.



Not drawn accurately

- (a) Triangle Q is congruent to triangle P .
Circle the condition that shows this.

[1 mark]

SSS

SAS

ASA

RHS

- (b) Kim says,
‘Triangle R is also congruent to triangle P .
It has sides of 6 cm and 9 cm and an angle of 50° too.’
Explain why Kim is wrong.

[1 mark]
