

Similar Shapes

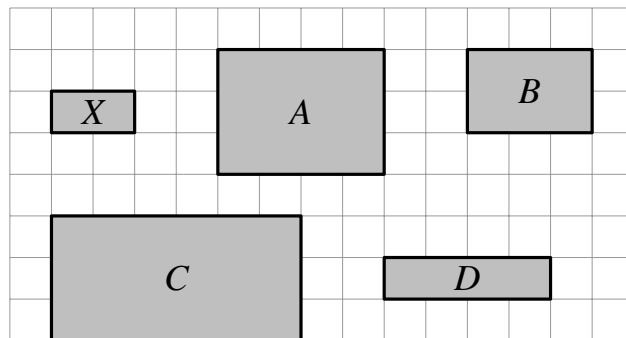
For AQA GCSE Mathematics (8300) • Foundation tier

Name _____

Total marks: **22**

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 five rectangles on a grid.



Which shape is similar to shape *X*?
Circle your answer.

[1 mark]

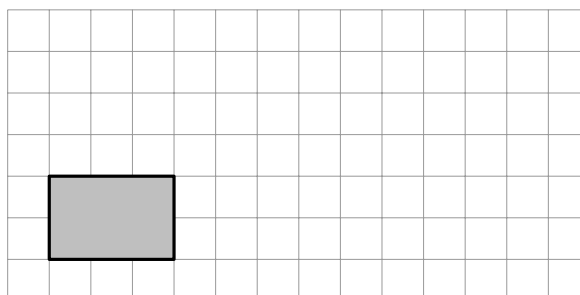
A

B

C

D

- 2** On the grid, draw a rectangle that is similar to this rectangle but **not** congruent to it.



[1 mark]

- 3 (a) Rectangle A is 3 cm by 5 cm and rectangle B is 6 cm by 10 cm.
Are A and B similar? Tick a box.
Give a reason.

[1 mark]

☐ Yes

☐ No

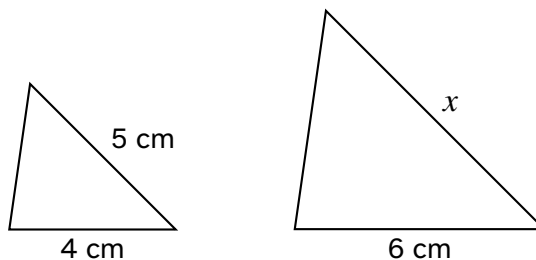
- (b) Rectangle C is 5 cm by 7 cm.
Are A and C similar? Tick a box.
Give a reason.

[1 mark]

☐ Yes

☐ No

- 4 Here are two triangles.



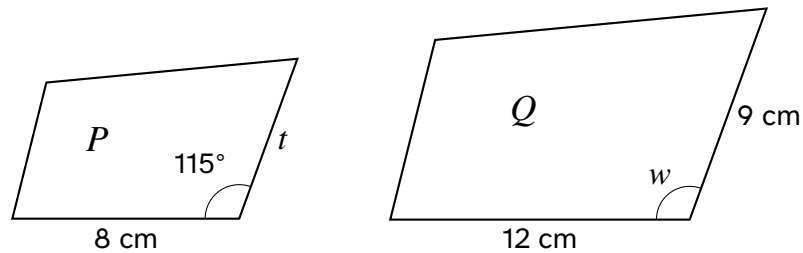
Not drawn accurately

The two triangles are mathematically similar.
Work out the value of x .

[2 marks]

Answer $x =$ _____ cm

- 5 Shapes P and Q are mathematically similar.



Not drawn accurately

- (a) Ben says,

‘Shape Q is bigger than shape P , so angle w must be bigger than 115° .’

Is Ben correct? Tick a box.

Give a reason for your answer.

[1 mark]

☐

Yes

☐

No

- (b) Work out the value of t .

[2 marks]

$t =$ _____ cm

- 6 Rectangle R is 6 cm long and 4 cm wide.
Rectangle S is 15 cm long and 10 cm wide.

Show that these two rectangles are similar.

[2 marks]

- 7** Triangles A and B are mathematically similar.
The perimeter of triangle A is 36 cm.
The perimeter of triangle B is 90 cm.
The shortest side of triangle B is 20 cm.

Work out the length of the shortest side of triangle A .

[2 marks]

Answer _____ cm

- 8** A pole 2 m tall casts a shadow 3 m long.
At the same time, a tree casts a shadow 12 m long.
Work out the height of the tree.

[2 marks]

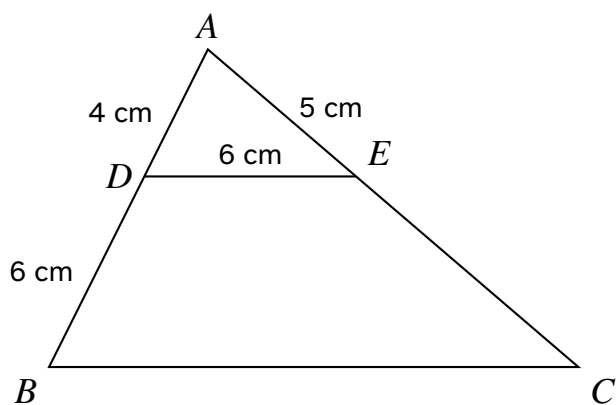
Answer _____ m

- 9** A photograph is 10 cm wide and 15 cm long.
It is enlarged so that its length is 45 cm.
Work out the width of the enlarged photograph.

[2 marks]

Answer _____ cm

- 10** DE is parallel to BC .
 $AD = 4\text{ cm}$, $DB = 6\text{ cm}$, $DE = 6\text{ cm}$ and $AE = 5\text{ cm}$



Not drawn accurately

- (a) Work out the length of BC .

[3 marks]

Answer _____ cm

- (b) Work out the length of EC .

[2 marks]

Answer _____ cm