

PAULS COACHING

9531996644

Materials

For this paper you must have:

- mathematical instruments



You **can** use a calculator.

Instructions

- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Fill in the boxes at the top of this page.
- Answer all questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book. Cross through any work you do not want to be marked.

Information

- The marks for questions are shown in brackets.
- You may ask for graph paper, tracing paper and more answer paper. These must be tagged securely to this answer book.

Advice

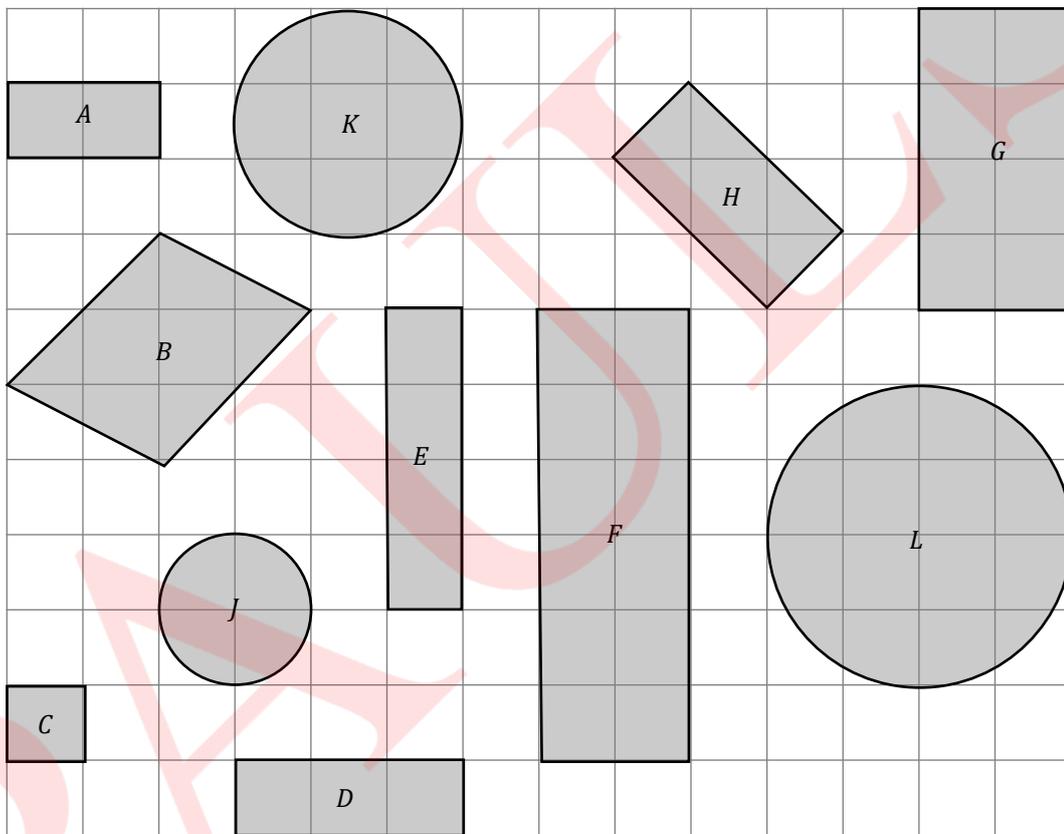
- In all calculations, show clearly how you work out your answer.

1(a) Define the term **similar shape**.

[1 mark]

1(b) From the shapes below find two pairs and one triplet of similar shapes.

[3 marks]



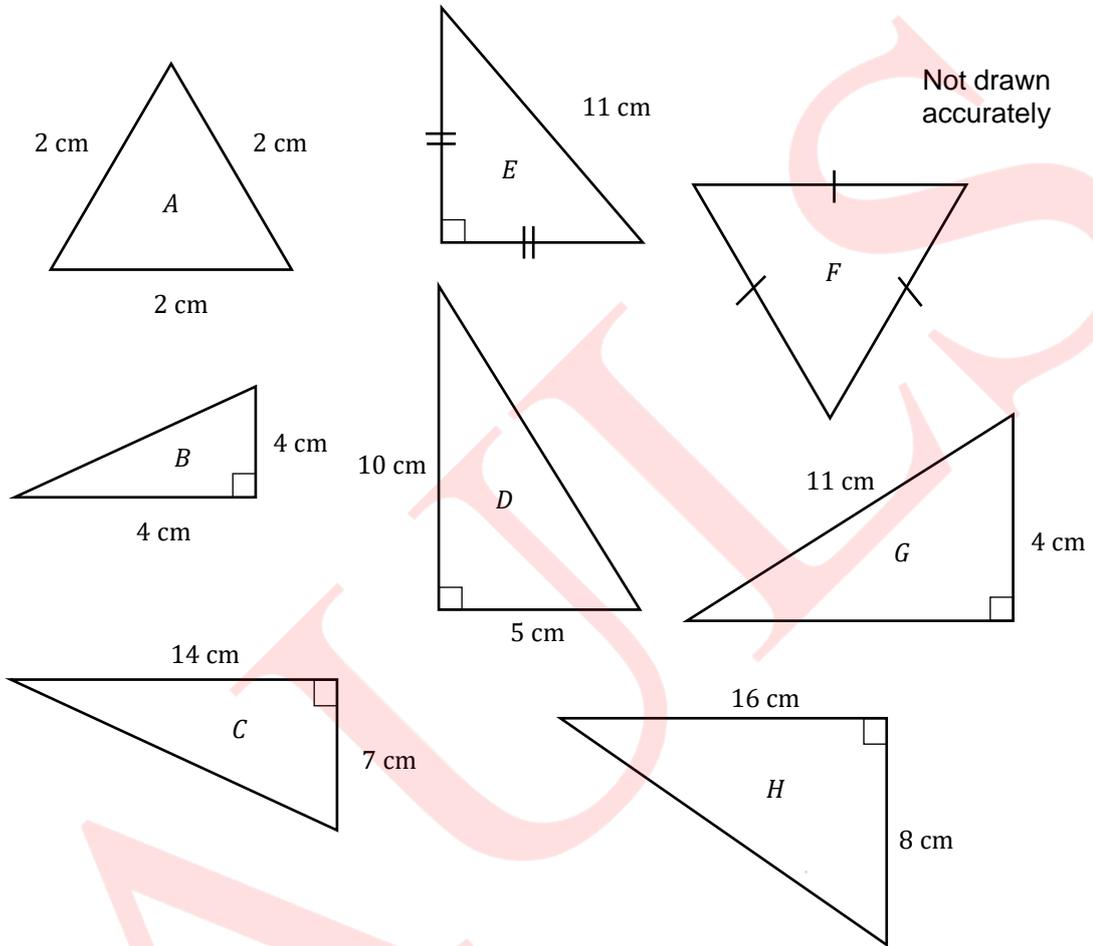
..... and

..... and

..... andand.....

2 The diagram below shows a variety of triangles.

In the set of shapes there are two pairs of similar triangles and one triplet of similar triangles.



From the shapes above identify the pairs and triplet of similar triangles.

[3 marks]

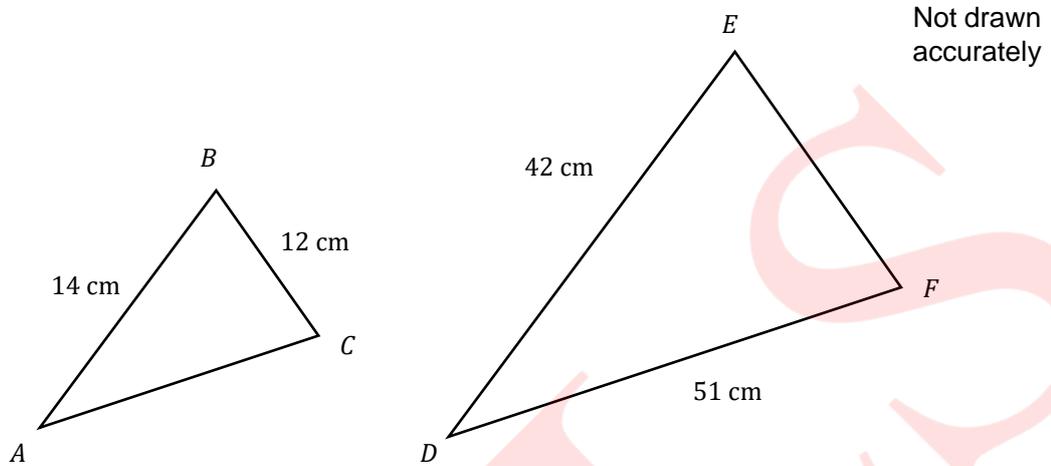
..... and are mathematically similar

..... and are mathematically similar

..... andand..... are mathematically similar

Turn over for next question

- 3** The two triangles, ABC and DEF shown below are similar.



- 3(a)** What is the scale factor that transforms ABC to DEF ?

[1 mark]

Answer _____

- 3(b)** Hence, or otherwise, calculate length EF .

[1 mark]

Answer _____

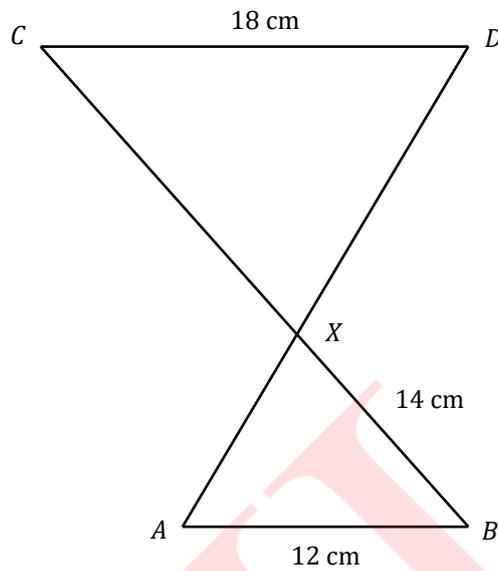
- 3(c)** Hence, or otherwise, calculate length AC .

[1 mark]

Answer _____

Turn over for next question

- 4 In the diagram below the triangles XCD and XAB are similar.



Not drawn accurately

- 4(a) What is the scale factor of the triangles?

[1 mark]

Answer _____

- 4(b) Using the scale factor, calculate XC

[1 mark]

Answer _____

- 4(c) Given that $AD = 25$ cm, find the values of AX and XD .

[2 marks]

 Answer _____

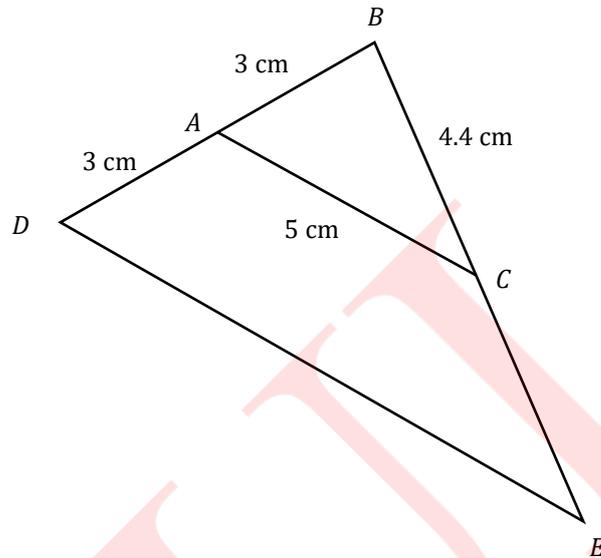
5 Triangles BCA and BED are mathematically similar.

$$BC = 4.4 \text{ cm}$$

$$BA = 3 \text{ cm}$$

$$AD = 3 \text{ cm}$$

$$AC = 5 \text{ cm}$$



5(a) What is the scale factor that transforms ABC to BDE ?

[1 mark]

Answer _____

5(b) Use the scale factor to calculate the length of BE and DE .

[2 marks]

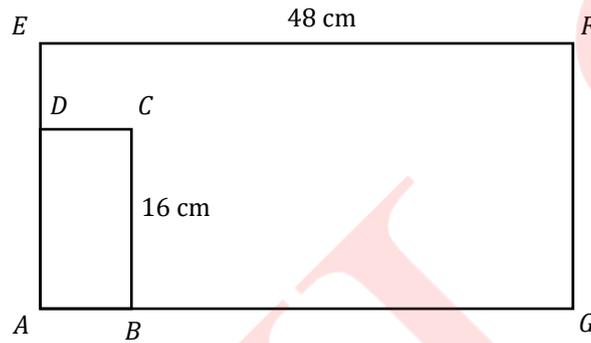
$BE =$ _____

$DE =$ _____

6 $ABCD$ and $AGFE$ are mathematically similar

$$EF = 48 \text{ cm}$$

$$CB = 16 \text{ cm}$$



Not drawn
accurately

6(a) What is the scale factor of $ADCB$ to $AEFG$?

[1 mark]

Answer _____

6(b) The area of $ABDC$ is 24
Calculate the area of $AEFG$.

[2 marks]

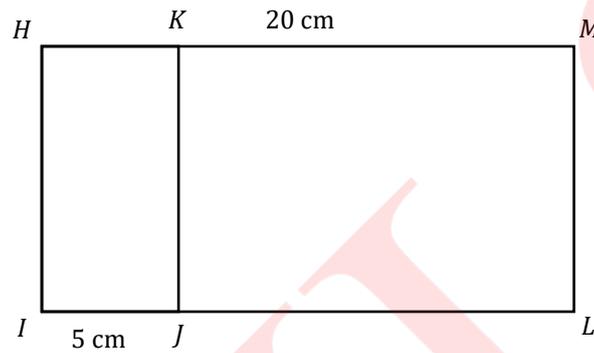
Answer _____

Turn over for next question

7 In the diagram below, $IJKH$ and $ILMH$ are mathematically similar.

$$IJ = 5 \text{ cm}$$

$$HM = 20 \text{ cm}$$



Not drawn accurately

Show that the scale factor of $IJKH$ to $ILMH$ is 2

[3 marks]

Answer _____