Congruent Shapes

Please write clearly in block capitals

Forename:
Surname:

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.
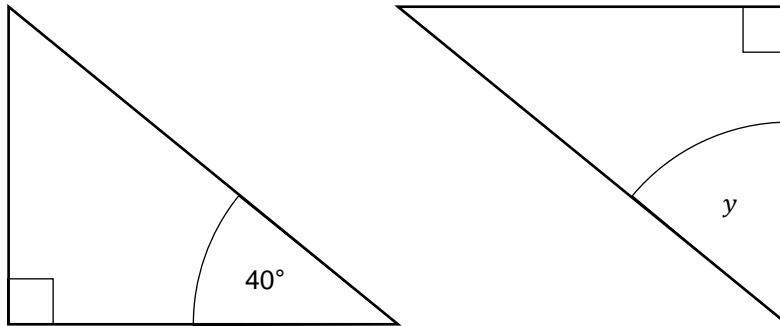
Information

- 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   The two triangles below are congruent.   *(Level 3)*

Not drawn
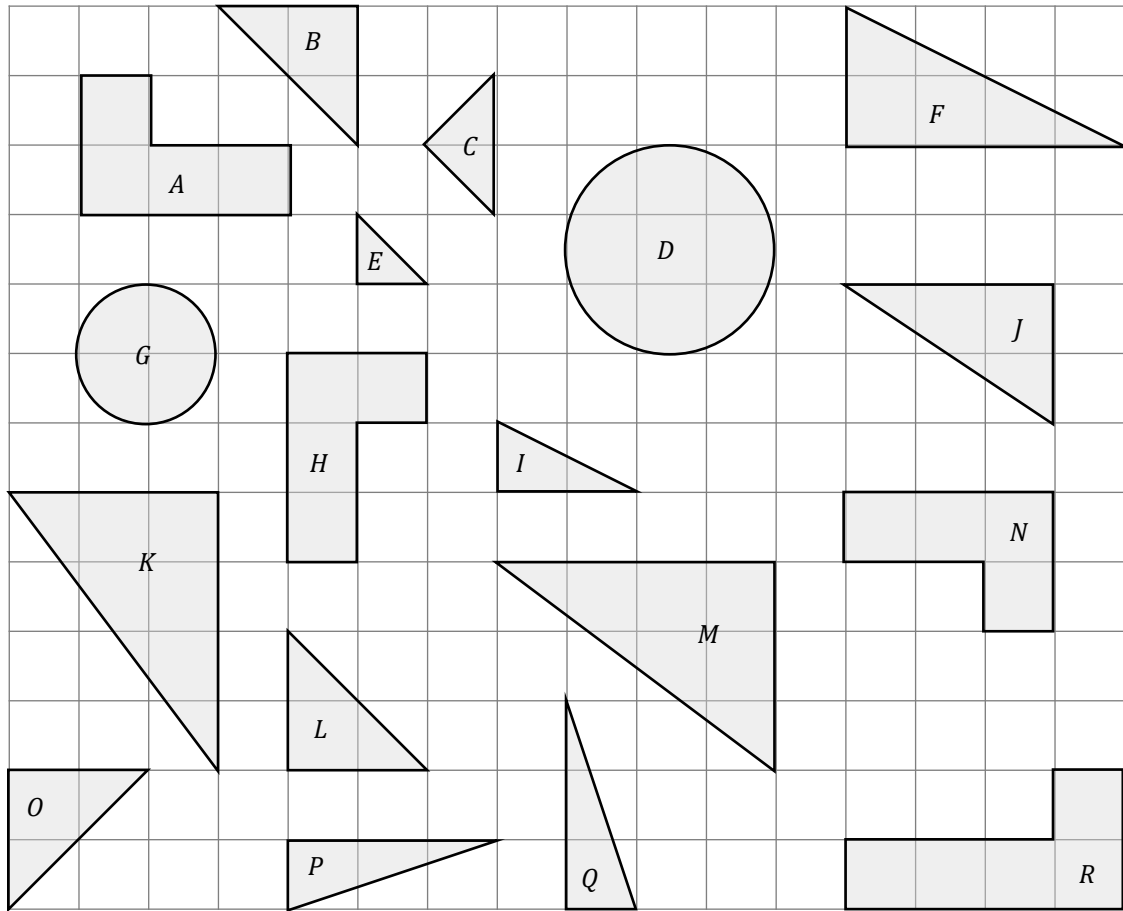accurately

40°

y

What is the value of y?

[1 mark]

$y =$ _____

Turn over for next question

1

Turn over ▶

2   Look at the shapes on the grid below.   *(Level 3)*

Identify two pairs and two triplets of congruent shapes from the diagram above.

[4 marks]

_____

_____

……….. and ……….. and ………..

……….. and ……….. and ………..

……….. and ………..

……….. and ………..

Turn over for next question

4

Turn over ▶

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3   Below is a shape drawn on a centimetre grid.   *(Level 4)*
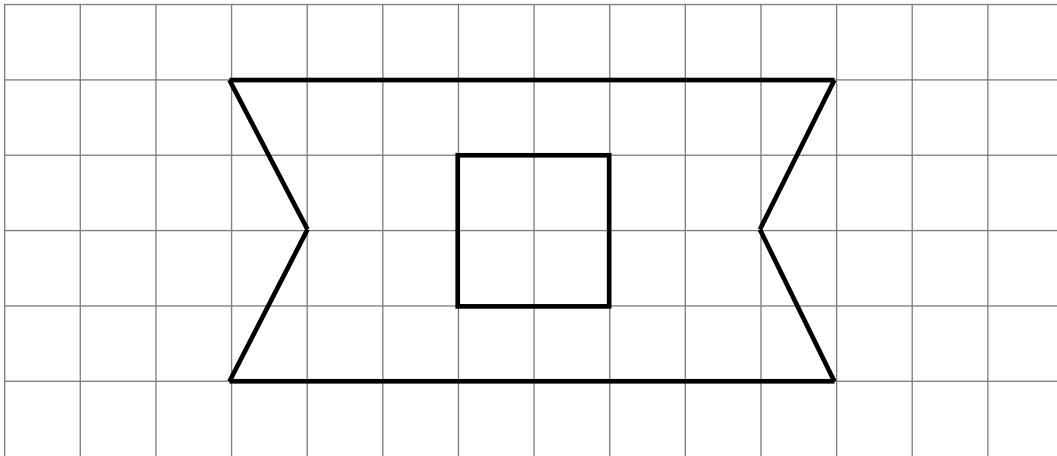
3(a)   Divide the shape above into four congruent shapes.

[1 mark]

3(b)   Dan believes that the shape can be divided into 8 congruent shapes.
Is he correct?

You **must** explain your answer

[2 marks]

_____

_____

_____

_____

_____

3

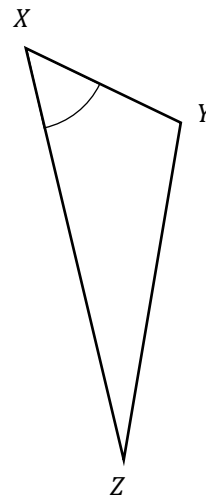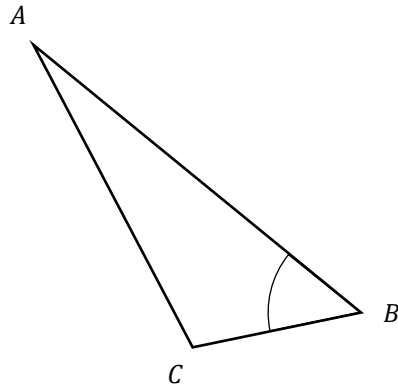© Maths Made Easy 2020

4 ABC and XYZ are triangles   *(Level 4)*

$AB = XZ$

$CB = XY$

$\angle CBA = \angle ZXY$

Not drawn
accurately

Prove these two triangles are congruent.

[2 marks]

_____

_____

_____

_____

_____

Answer _____

2

Turn over ►

5   Sophie draws a triangle with angles x, $4x$ and $7x$.   *(Level 5)*

Ben then uses this information to draw the triangle below.
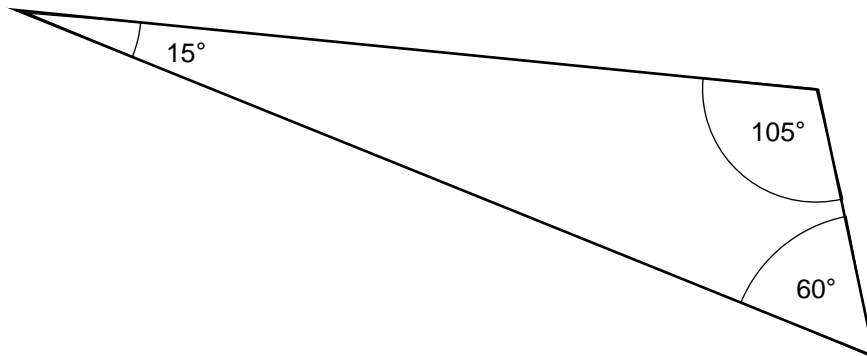
Not drawn accurately

5(a)   Is his triangle correct, based on the information given?

You **must** justify your answer.

[2 marks]

_____

_____

_____

5(b)   Is Ben's triangle congruent to Sophie's?

You must explain your answer

[1 mark]

_____

_____

_____

Turn over for next question

3

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6 In the diagram below: *(Level 6)*
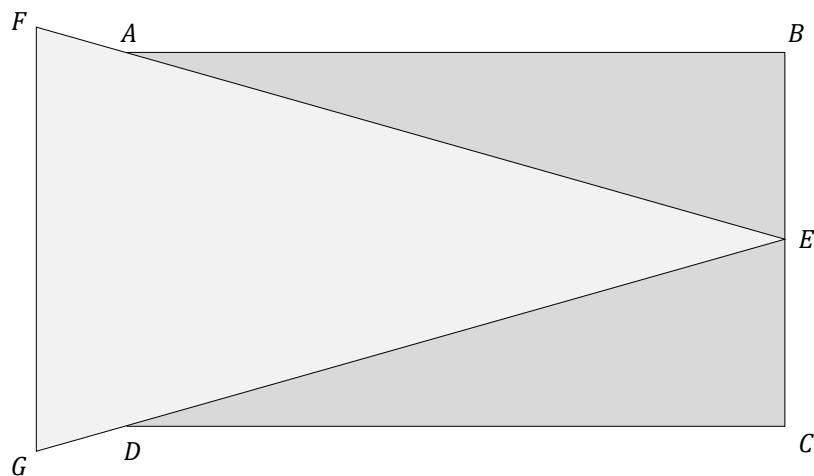
$\angle\ GFE = \angle\ EGF$

AB is parallel and equal to DC

E is the midpoint of BC

$FA : AE\ =\ 1 : 3$

$GD : DE\ =\ 1 : 3$

F   A   B   Not drawn accurately

E

G   D   C

6(a) Using RHS, show that the triangles ABE and ECD are congruent.

You **must** justify your answer

[2 marks]

Answer _____

6(b) Show that the triangles ADG and ADF are congruent.

[4 marks]

Turn over for next question

Turn over ►

7   Of the following, which can be used to prove two triangles are congruent?   *(Level 6)*

7(a)   Circle those that apply.

[3 marks]

AAA

AAS

SAS

RHS

SSS

SSA

ASA

7(b)   For those that you did not select**, through use of a description or diagram**, explain why they cannot be used to prove congruence.

[2 marks]

_____

_____

_____

_____

_____

5

END