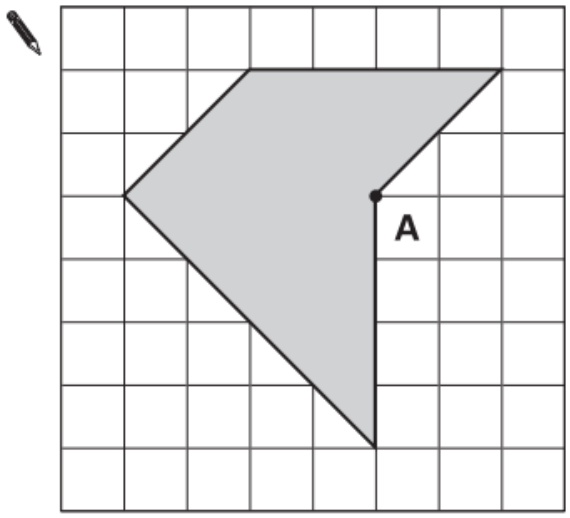
2D Shapes - Questions

Key Stage 2: 2003 Paper B

10 Draw **two straight lines** from point **A** to divide the shaded shape into a square and two triangles.



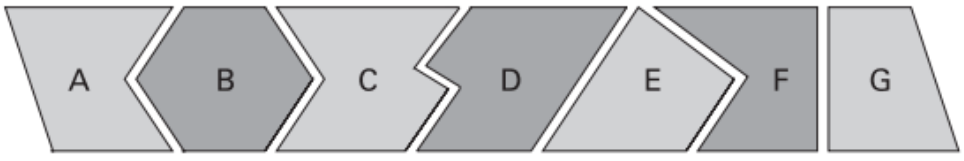
10

1 mark

Key Stage 2: 2004 Paper B

1.

8 Here are seven shapes.



Write the letters of the two shapes which are **pentagons**.

. . . . . and . . . . . .

8

1 mark

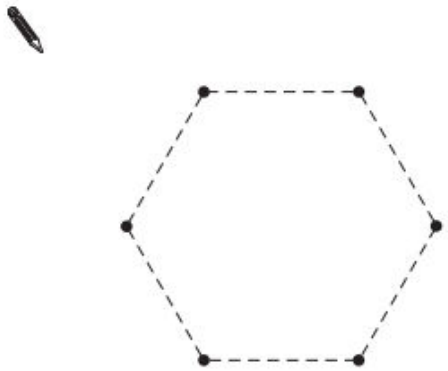
Key Stage 2: 2004 Paper B

2.

12 Here is a regular hexagon.

Join three of the dots to make an **equilateral** triangle.

Use a ruler.



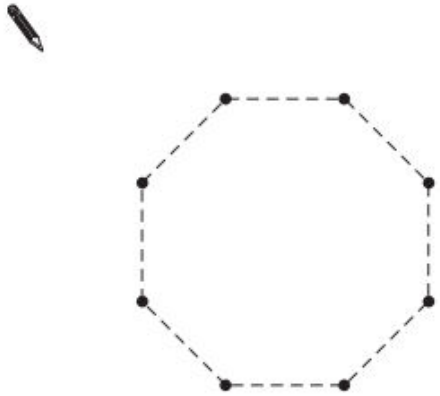
12a

1 mark

Here is a regular octagon.

Join three of the dots to make an **isosceles** triangle.

Use a ruler.



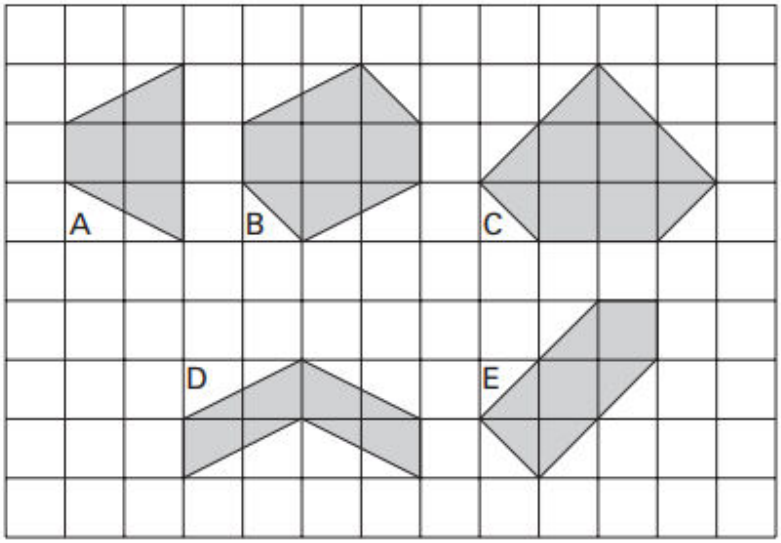
12b

1 mark

Key Stage 2: 2005 Paper A

1.

6 Here are some shaded shapes on a square grid.



Write the letters of the **two** shapes which are hexagons.

..... and .....

6a

1 mark

Write the letters of the **two** shapes which have **right angles**.

..... and .....

6b

1 mark

Key Stage 2: 2005 Paper A

2.

21 Here are four statements.

For each statement put a tick (✓) if it is **possible**.
Put a cross (✗) if it is **impossible**.

A triangle can have 2 acute angles. ☐

A triangle can have 2 obtuse angles. ☐

A triangle can have 2 parallel sides. ☐

A triangle can have 2 perpendicular sides. ☐

21i ☐

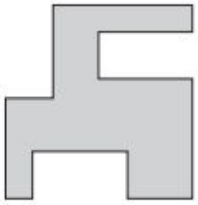
21ii ☐

2 marks

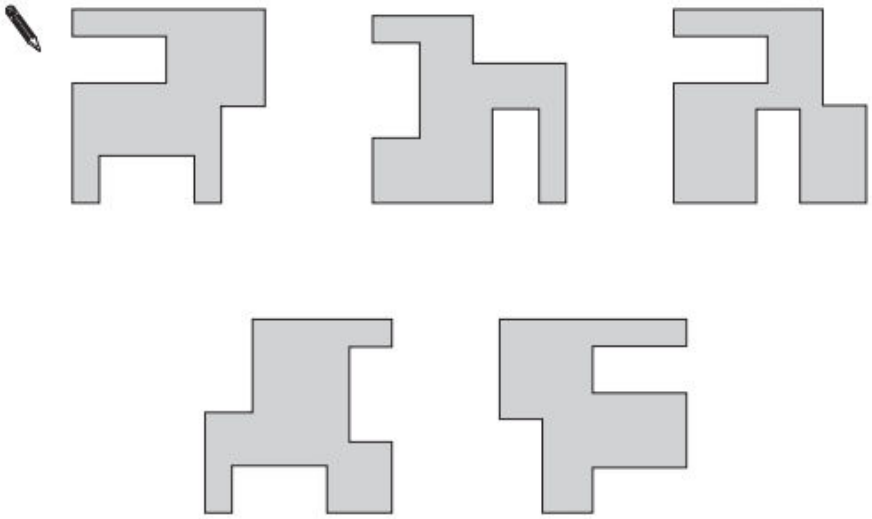
Key Stage 2: 2005 Paper B

1.

3 Here is a shape.



Put a tick (✓) on the shape below which is the same as the one above.



3

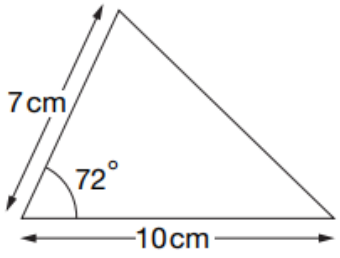
1 mark

Key Stage 2: 2006 Paper A

1.

21 Here is a sketch of a triangle.

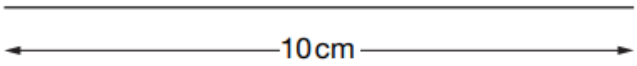
It is not drawn to scale.



Draw the full-size triangle **accurately** below.

Use a protractor (angle measurer) and a ruler.

One line has been drawn for you.



21i _____

21ii _____

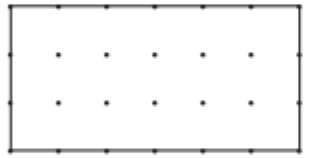
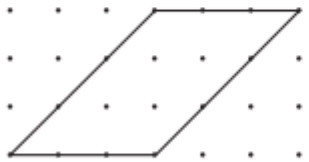
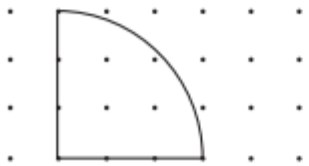
2 marks

Key Stage 2: 2006 Paper B

1.

7 Put ticks (✓) and crosses (✖) on the chart to complete it correctly.

One has been done for you.

Shape	It is a quadrilateral	It has one or more right angles
	✖	✓
		
		
		

7a

1 mark

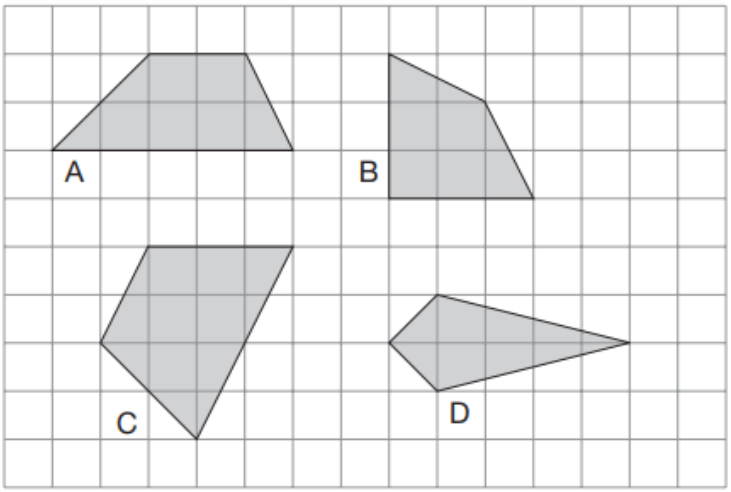
7b

1 mark

Key Stage 2: 2007 Paper A

1.

17 Here are some shapes on a grid.



Write the letter of each shape that has one pair of parallel sides.

_____ 17

1 mark

Key Stage 2: 2007 Paper A

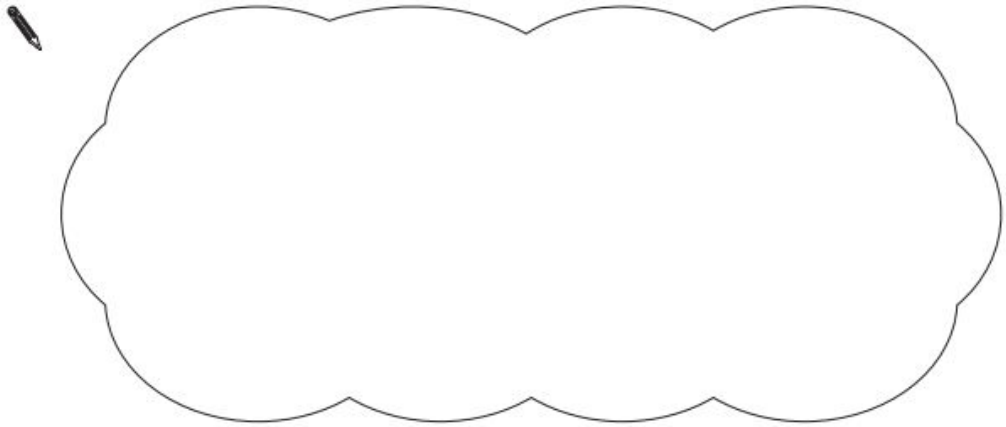
1.

25 Jamie draws a triangle.

He says,

'Two of the three angles in my triangle are obtuse'.

Explain why Jamie **cannot** be correct.



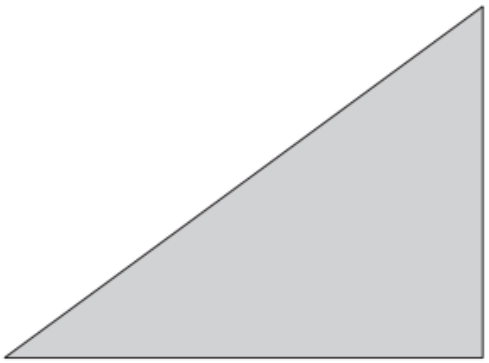
25

1 mark

Key Stage 2: 2007 Paper B

1.

4



Measure accurately the length of the **shortest** side of this triangle.

Write your answer in centimetres.

cm

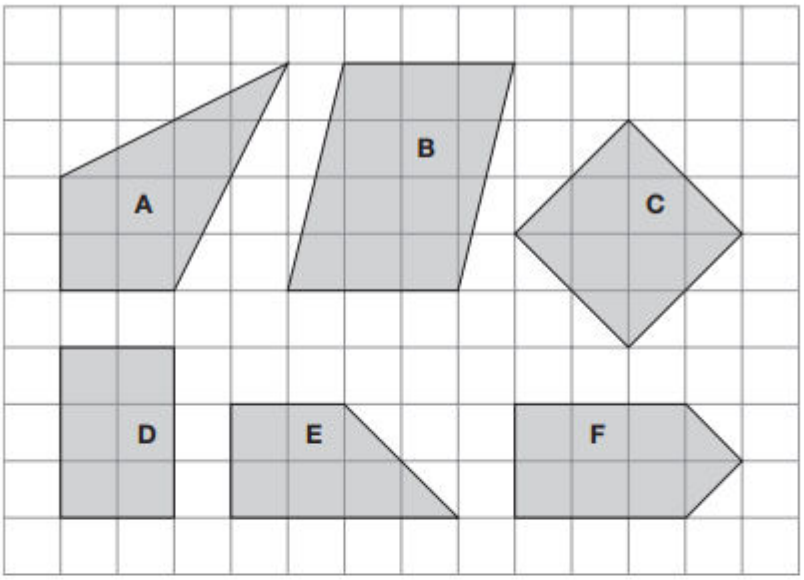
4

1 mark

Key Stage 2: 2007 Paper B

2.

10 Look at these shapes.



Complete the sentences below.

One has been done for you.

A is a kite

_____ is not a quadrilateral

_____ has only 2 right angles

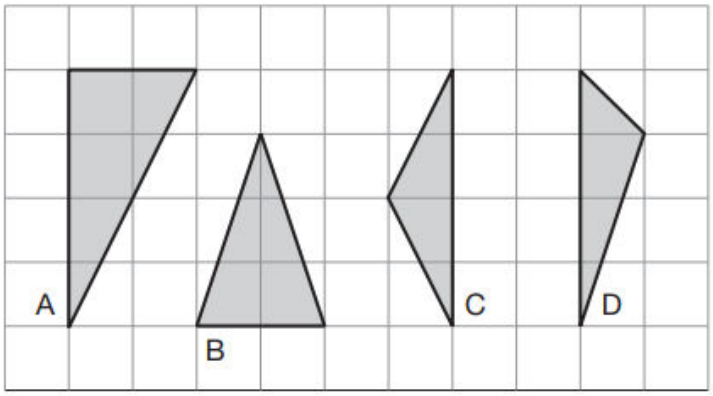
_____ has 2 acute angles

2 marks

Key Stage 2: 2007 Paper B

3.

14 Here are four triangles on a square grid.



Write the letters of the **two isosceles** triangles.

_____ and _____

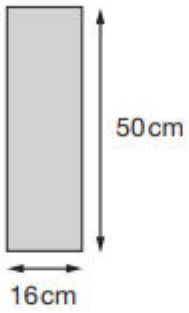
14

1 mark

Key Stage 2: 2007 Paper B

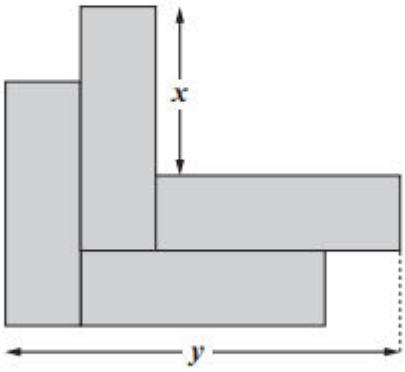
4.

23 Kate has some rectangles.
They each measure 16 centimetres by 50 centimetres.



Not actual size

She makes this design with four of the rectangles.



Work out the lengths x and y.

$x =$ ☐ cm

23a

1 mark

$y =$ ☐ cm

23b

1 mark

Key Stage 2: 2008 Paper A

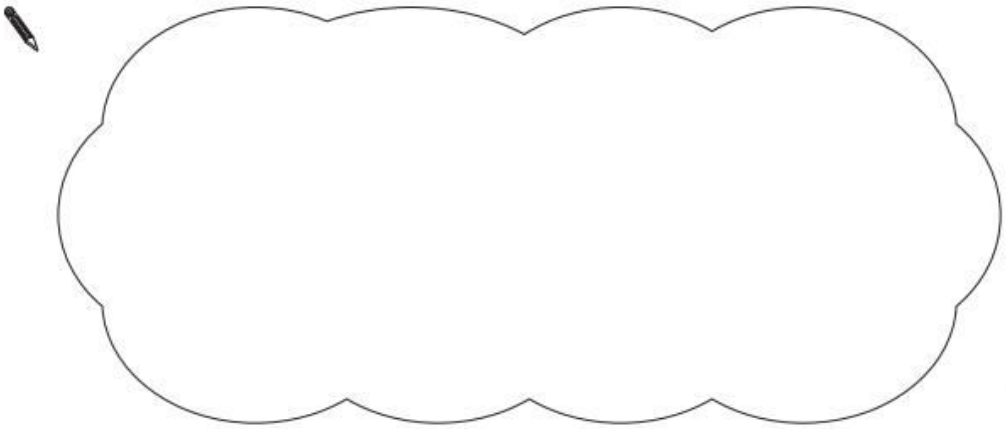
1.

7 A square always has four sides.

Is it true that a four-sided shape is **always** a square?

Circle **Yes** or **No**. Yes / No

Explain how you know.



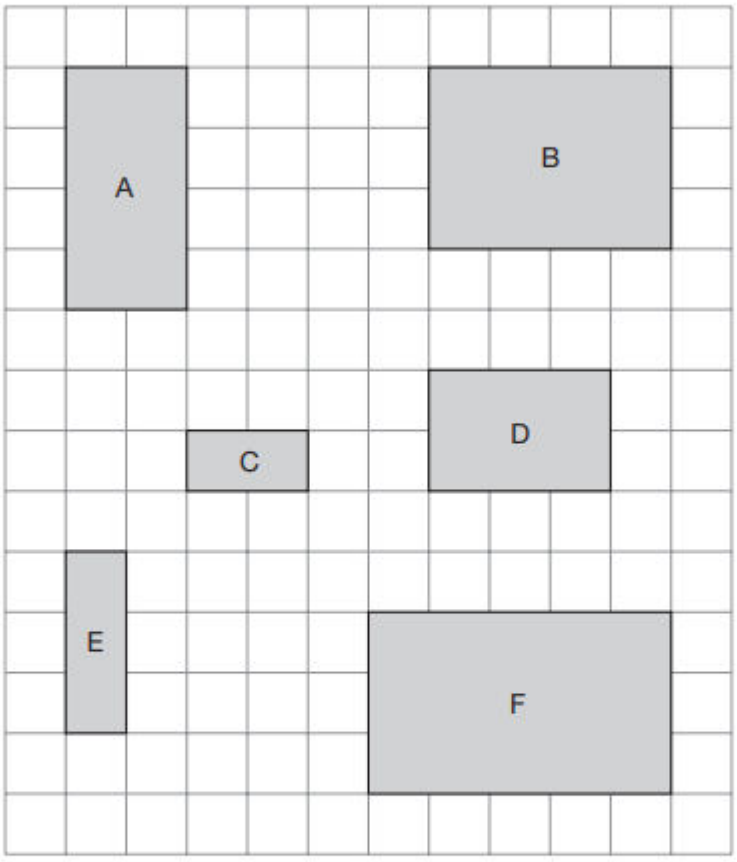
7

1 mark

Key Stage 2: 2008 Paper A

2.

12 Here are six rectangles on a grid.



Which **two** rectangles fit together, without overlapping, to make a **square**?

_____ and _____

12

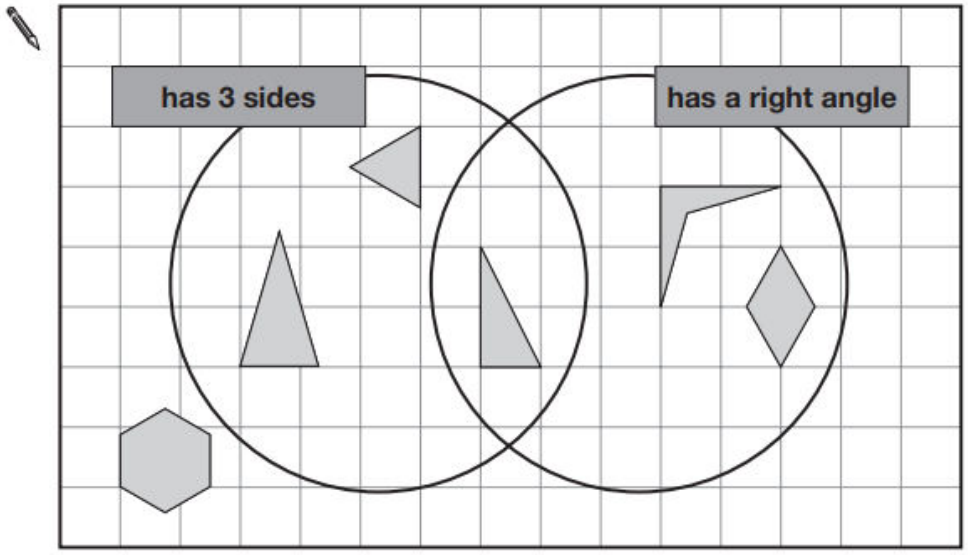
1 mark

Key Stage 2: 2008 Paper B

1.

2 Here is a diagram for sorting shapes.

One of the shapes is in the wrong place.
Put a cross (✕) on it.



2

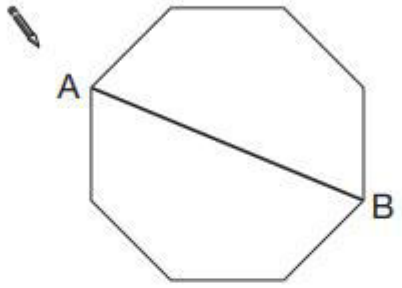
1 mark

Key Stage 2: 2008 Paper B

2.

21 Here is a regular octagon with two vertices joined to make the line AB.

Join two other vertices to draw **one** line that is **parallel** to the line AB.

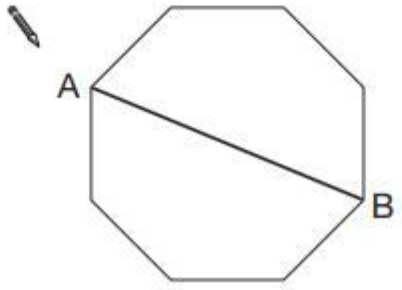


21a

1 mark

Here is the octagon again.

Join two vertices to draw **one** line that is **perpendicular** to the line AB.



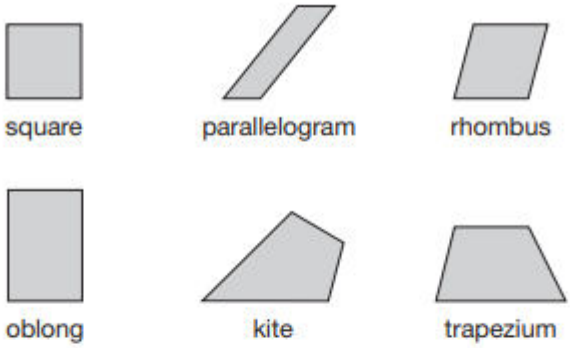
21b

1 mark

Key Stage 2: 2009 Paper A

1.

13 Here are six quadrilaterals with their mathematical names.



Lara chooses one of the quadrilaterals.

She says,

'It has two acute angles.
All four sides are the same length'.

Which quadrilateral did Lara choose?

_____ 13a

1 mark

Stefan chooses one of the quadrilaterals.

He says,

'It has more than one obtuse angle.
It has no parallel sides'.

Which quadrilateral did Stefan choose?

_____ 13b

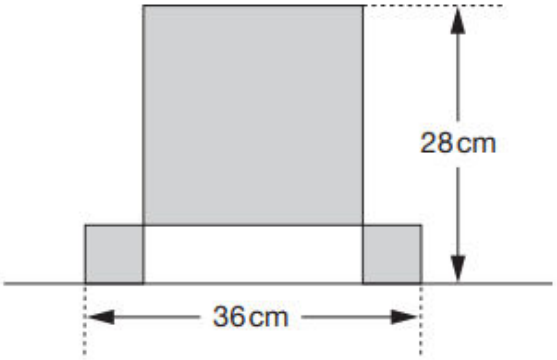
1 mark

Key Stage 2: 2009 Paper A

2.

24 This design has **one large square** and **two identical small squares**.

The design measures 36 centimetres by 28 centimetres.



Not actual size

Calculate the length of a side of the **large** square.

Show your **working**. You may get a mark.

cm

24i

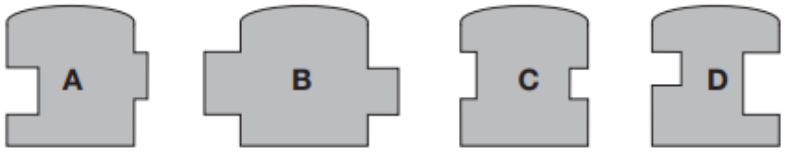
24ii

2 marks

Key Stage 2: 2009 Paper B

1.

6 Here are four shapes.



They can be fitted together in a straight line so that there are no gaps between them.

Write the order of the letters of the shapes when they all fit together.

_____ 6

1 mark

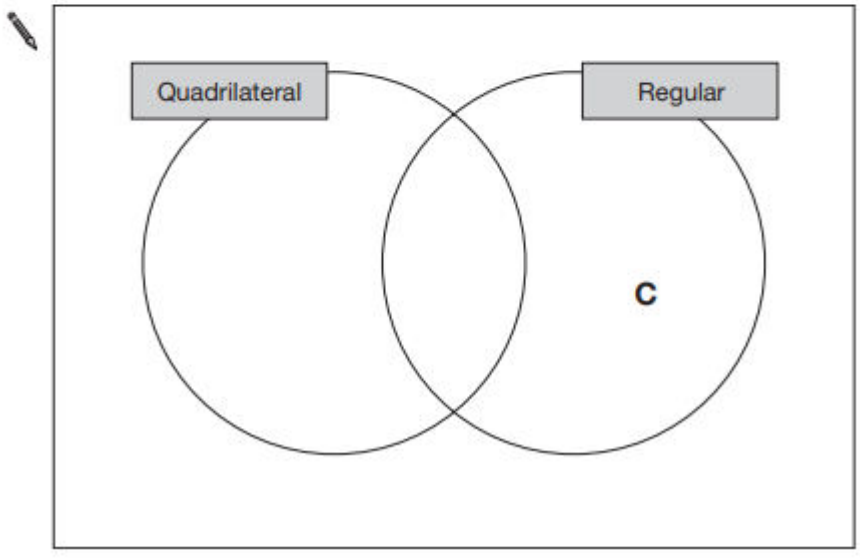
Key Stage 2: 2009 Paper B

2.

9 Here are four shapes in a Carroll diagram.

	Regular	Not regular
Quadrilateral	A	B
Not a quadrilateral	C	D

Use this information to write the letters **A**, **B** and **D** in the Venn diagram below.



9i

9ii

2 marks

Key Stage 2: 2009 Paper B

3.

13 The twelve points on this circle are equally spaced.

Join four points to make a **square**.

Use a ruler.

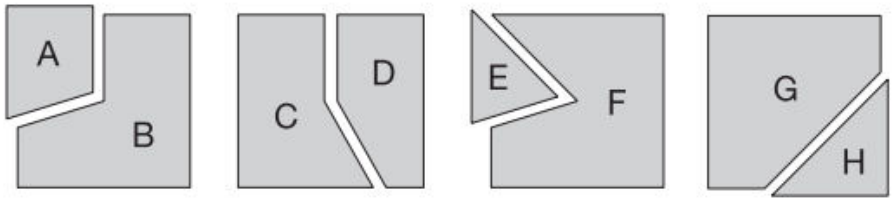
13

1 mark

Key Stage 2: 2010 Paper A

1.

8 Each of these four squares has been cut into two new shapes.



Write the letters of all the new shapes that are **hexagons**.

_____ 8a

1 mark

Write the letters of all the new shapes that are **pentagons**.

_____ 8b

1 mark

Key Stage 2: 2010 Paper A

2.

13 Liam has two different sizes of rectangle.

He makes this pattern with them.

Not actual size

Calculate the lengths of **A** and **B**.

A = ☐ cm

13a

1 mark

B = ☐ cm

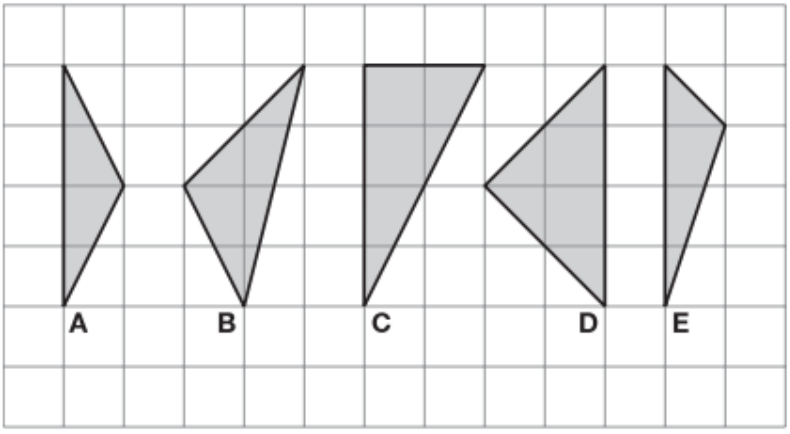
13b

1 mark

Key Stage 2: 2010 Paper B

1.

16 Here are five shaded triangles on a square grid.



Write the letter of each triangle that has a **right angle**.

_____ 16a

1 mark

Write the letter of each triangle that has **two equal sides**.

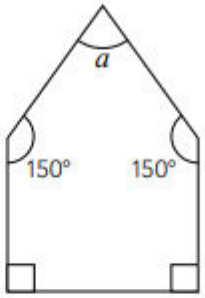
_____ 16b

1 mark

Key Stage 2: 2011 Paper A L6

1.

8 The diagram shows a pentagon.



Not drawn accurately

Each side of the pentagon is the **same length**.

Is the shape a **regular** pentagon?

Circle Yes or No.

Yes / No

Explain your answer.

(1 mark)

Work out the size of angle a

Show your working

$a =$ °

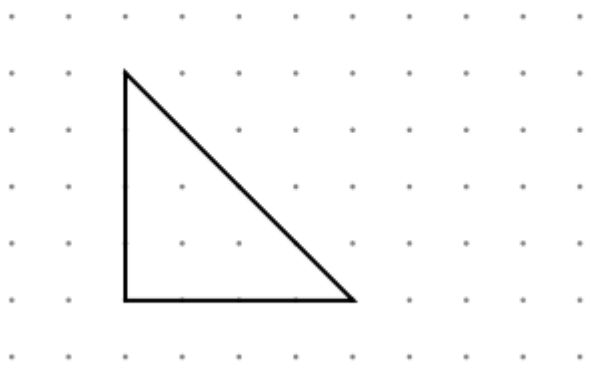
(2 marks)

Key Stage 2: 2011 Paper A L6

2.

10 Here is a triangle.

Two of its sides are 4cm and **two** of its angles are 45°



Join dots to make a different triangle.

Make **only one** of its sides 4cm and **only one** of its angles 45°

(1 mark)

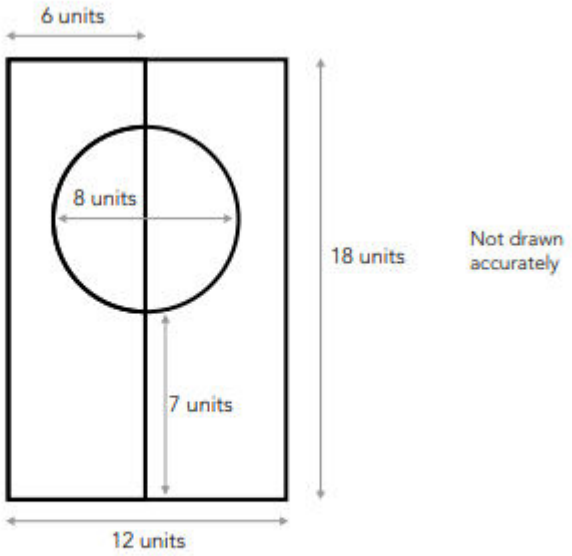
Key Stage 2: 2011 Paper B L6

1.

6 The flag of Greenland is a rectangle with a circle drawn inside.

Here is the same flag rotated.

The sketch gives the information you need to draw the flag.



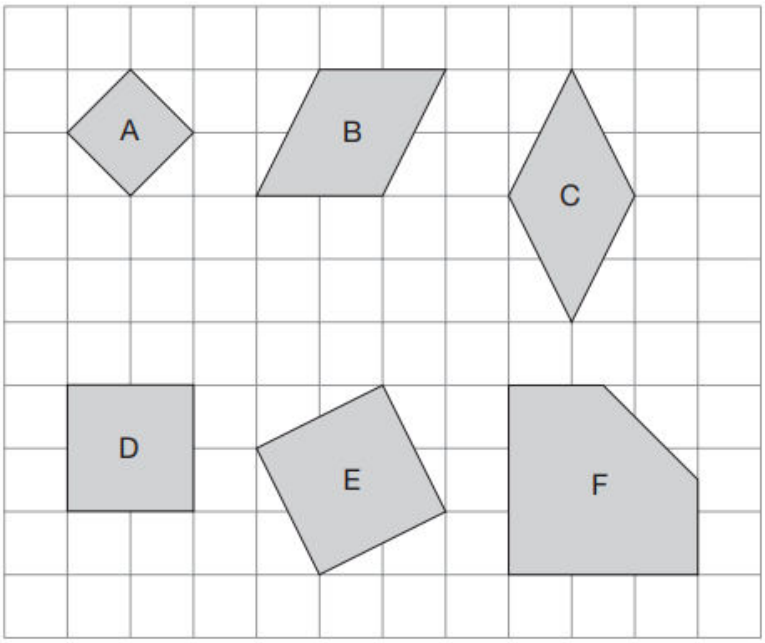
Not drawn accurately

The question is on the next page.

Key Stage 2: 2011 Paper A

1.

5 Here are six shapes on a square grid.



Write the letters of **all** the shapes that are squares.

_____ 5

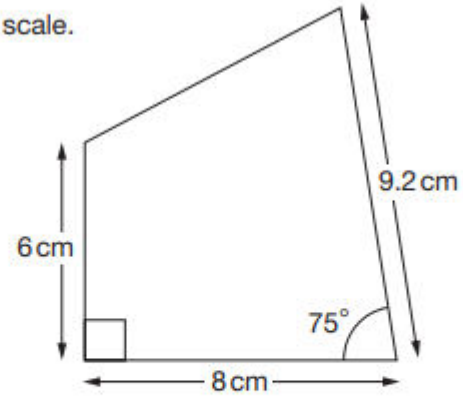
1 mark

Key Stage 2: 2011 Paper A

2.

24 Here is a sketch of a quadrilateral.

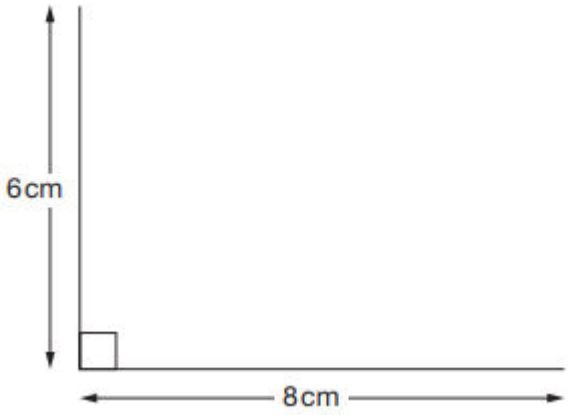
It is not drawn to scale.



Draw the full-size quadrilateral **accurately** below.

Use a protractor (angle measurer) and a ruler.

Two of the lines have been drawn for you.



24i

24ii

2 marks

Key Stage 2: 2011 Paper A

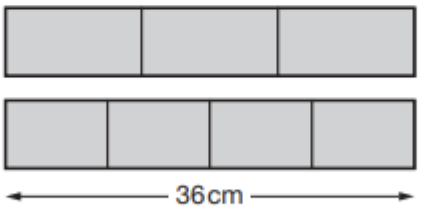
3.

25 Joe has two strips of card.

Each strip is 36 centimetres long.

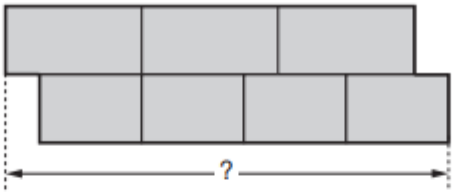
One strip is divided into three equal parts.

The other strip is divided into four equal parts.



Not actual size

Joe uses the two strips to make this shape.



What is the total length of Joe's shape?

Show your working

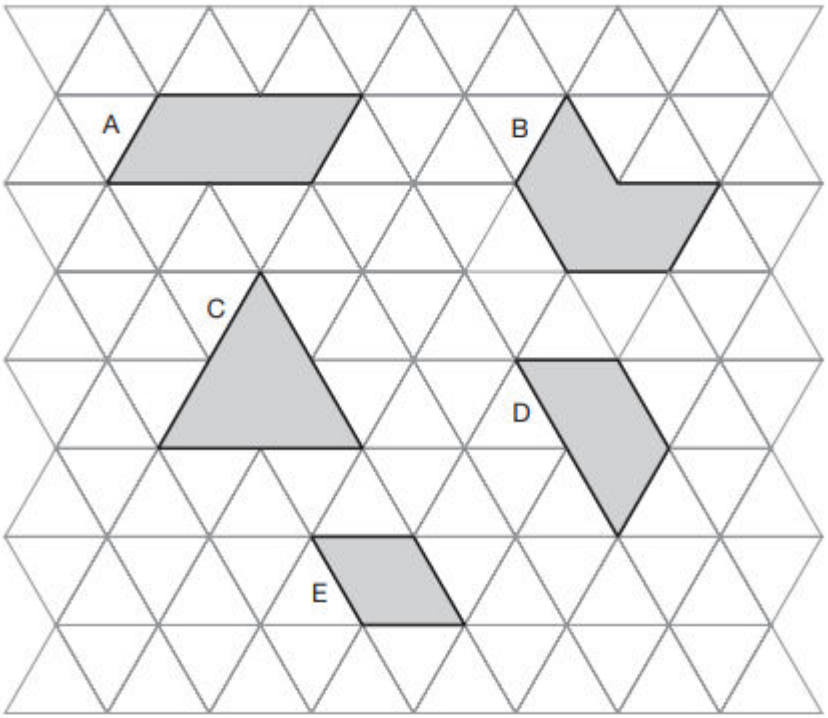
cm

2 marks

Key Stage 2: 2011 Paper B

1.

14 Here are five shapes made from equilateral triangles.



Write the letter of the shape that is a **rhombus**.

_____ 14a

1 mark

Write the letter of the shape that has only **one** pair of parallel sides.

_____ 14b

1 mark

Key Stage 2: 2011 Paper B

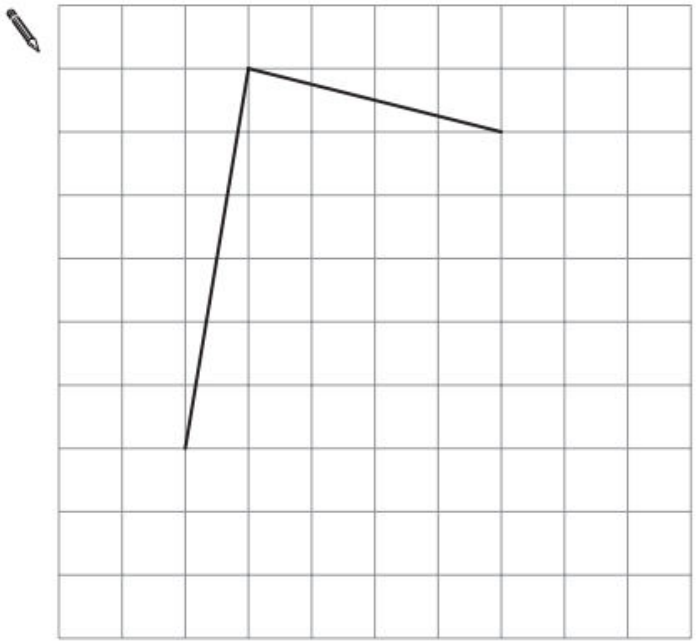
2.

23 Here is a square grid.

Two sides of a kite are drawn on the grid.

Complete the kite by drawing the two missing sides.

Use a ruler.



23

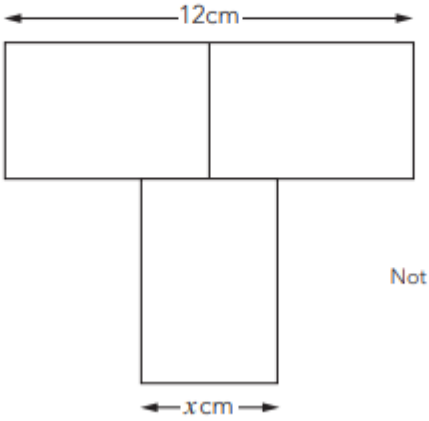
1 mark

Key Stage 2: 2012 Paper A L6

1.

4 Here is a T-shape made from 3 identical rectangles.

The area of the T-shape is **90cm²**



Not to scale

Work out the value of x.

Show your working

cm

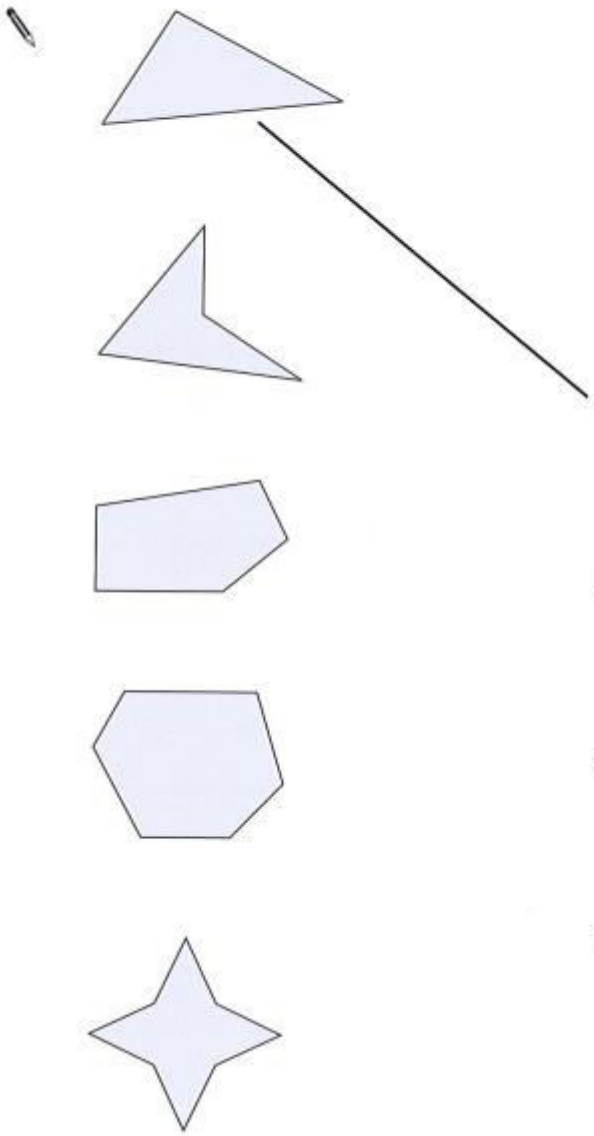
(2 marks)

Key Stage 2: 2012 Paper A

1.

1 Match each shape to the correct name.

One has been done for you.



pentagon

triangle

octagon

quadrilateral

hexagon

2 marks

Key Stage 2: 2012 Paper A

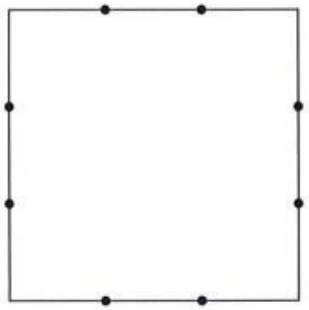
2.

8 This square has two dots on each side.

The dots are equally spaced.

Join two dots to divide the square into **two equal parts**.

Use a ruler.



8

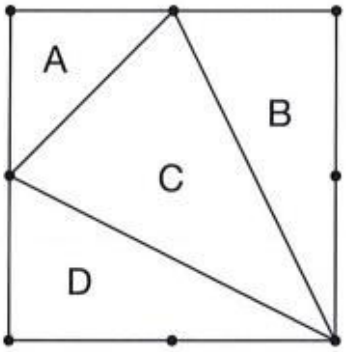
1 mark

Key Stage 2: 2012 Paper B

1.

6 This diagram shows a square with dots at the vertices and at the middle of each side.

The square is divided into four triangles, **A**, **B**, **C** and **D**.



Write the letters of all the triangles that have a **right angle**.

_____ 6a

1 mark

Write the letters of all the triangles that have **two equal sides**.

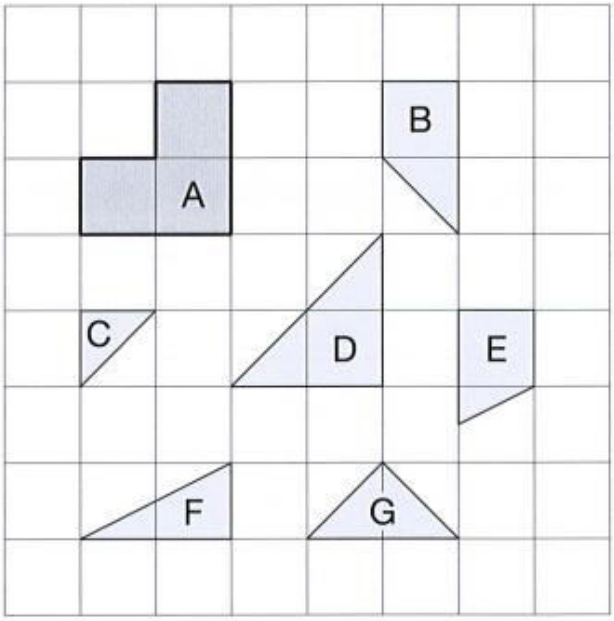
_____ 6b

1 mark

Key Stage 2: 2012 Paper B

2.

16 Here are some tiles on a square grid.



Three different tiles can be fitted together without overlapping to make a shape identical to tile **A**.

Write the letters of the three tiles.

_____ and _____ and _____

16

1 mark

Key Stage 2: 2013 Paper A L6

1.

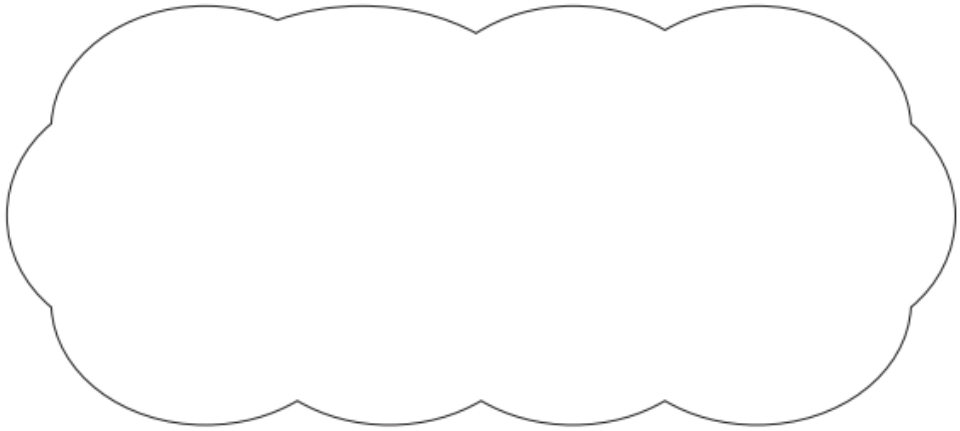
8 Megan says,

'If two rectangles have the same perimeter, they must have the same area.'

Is she correct?
Circle Yes or No.

Yes / No

Explain how you know.

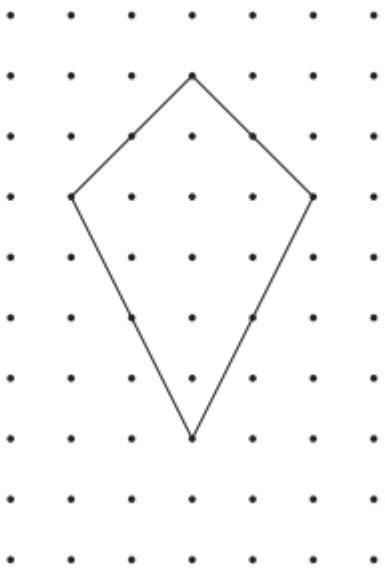


1 mark

Key Stage 2: 2014 Paper A

1.

14 Here is a shape on a grid.



For each statement, put a tick (✓) if it is true.
Put a cross (✗) if it is not true.

The shape is a quadrilateral. ☐

The shape has 2 lines of symmetry. ☐

The shape is a parallelogram. ☐

The shape has one right angle. ☐

14i

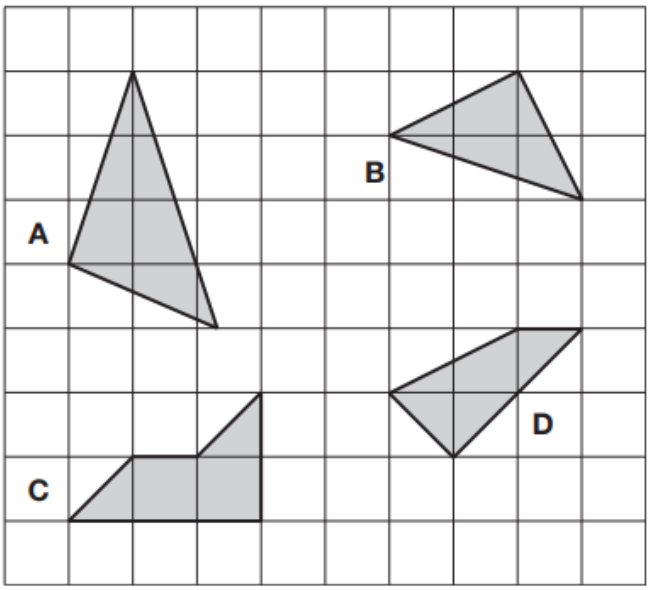
14i

2 marks

Key Stage 2: 2014 Paper B

1.

10 Here are four shapes on a square grid.



Write the letters of **all** the shapes that have **exactly two** sides which are equal in length.

10i _____

10ii _____

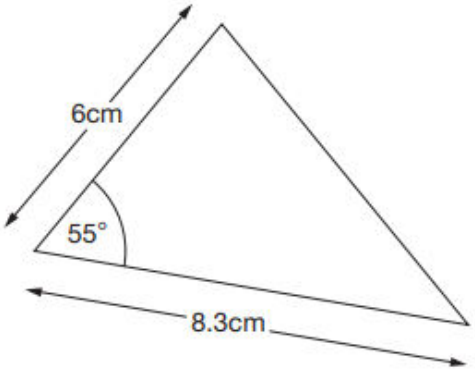
2 marks

Key Stage 2: 2014 Paper B

2.

22 Here is a sketch of a triangle.

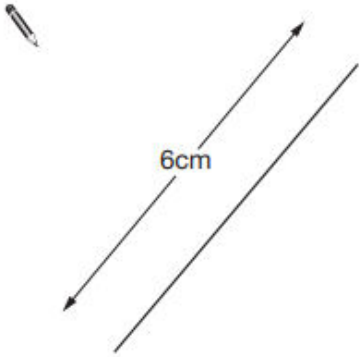
It is not drawn to scale.



Draw the full-size triangle accurately below.

Use a protractor (angle measurer) and a ruler.

One line has been drawn for you.



22i

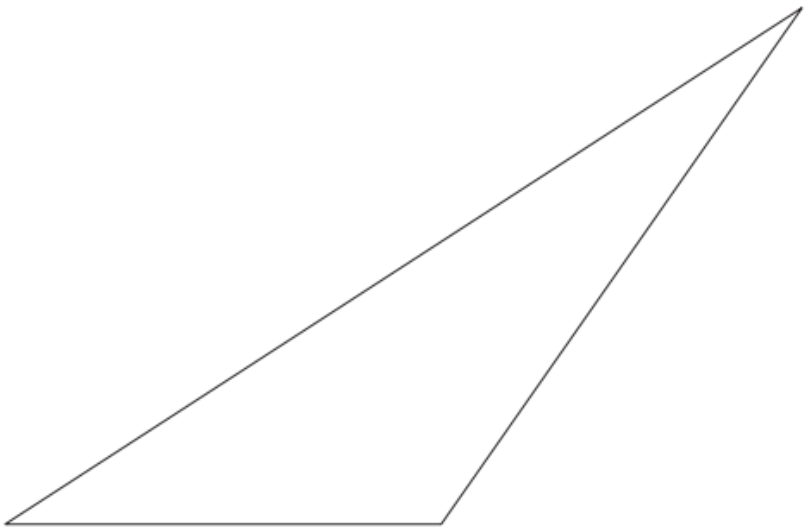
22ii

2 marks

Key Stage 2: 2015 Paper A

1.

12



Measure the length of the shortest side of this triangle in millimetres.

mm

12a

1 mark

Measure the size of the largest angle in this triangle.

°

12b

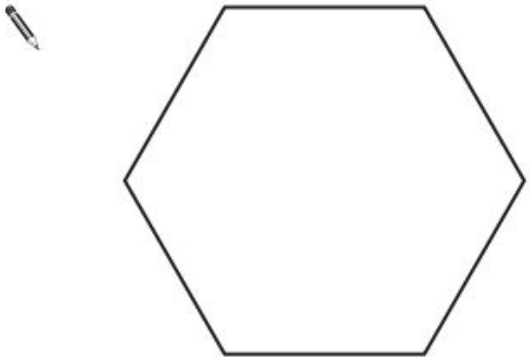
1 mark

Key Stage 2: 2015 Paper A

2.

13 Here is a hexagon.

Draw **two** straight lines across the hexagon to make two triangles and two quadrilaterals.



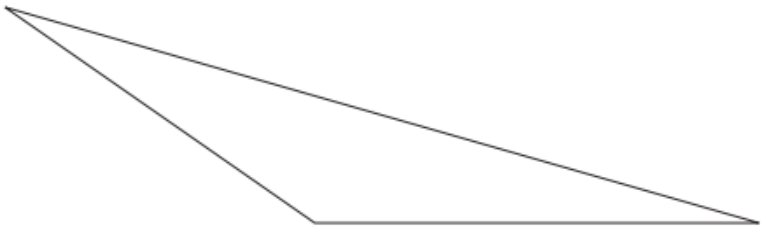
13

1 mark

Key Stage 2: 2016 Paper 2 Reasoning - Sample

1.

9 Here is a triangle.



Measure the shortest side accurately, in centimetres.

cm

1 mark

Measure the largest angle.

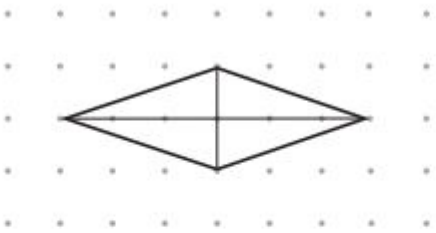
°

1 mark

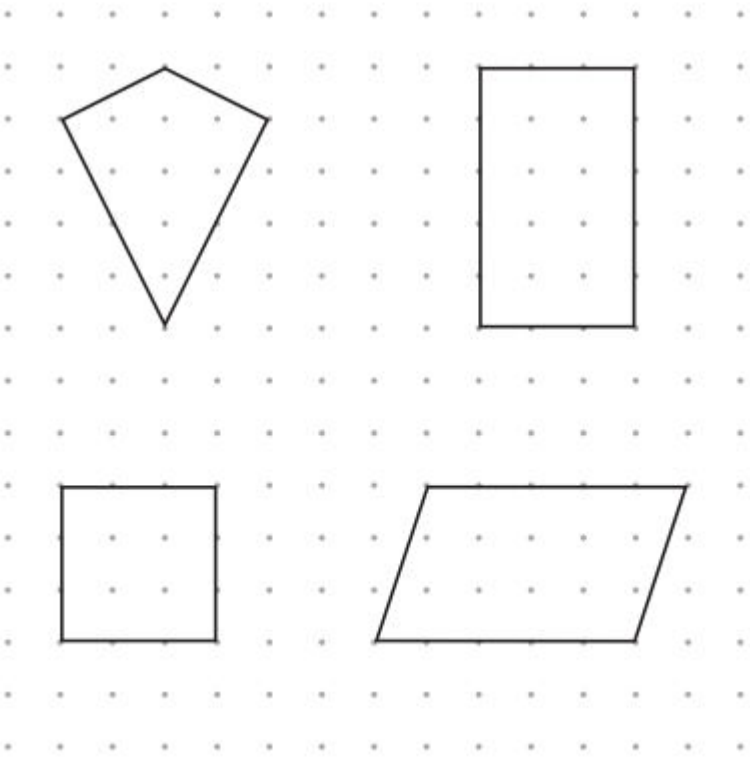
Key Stage 2: 2016 Paper 3 Reasoning

1.

18 The diagonals of this quadrilateral cross at right angles.



Tick **all** the quadrilaterals that have diagonals which cross at right angles.



2 marks

Key Stage 2: 2017 Paper 3 Reasoning

1.

11 A bicycle wheel has a diameter of 64 cm.

What is the **radius** of the bicycle wheel?

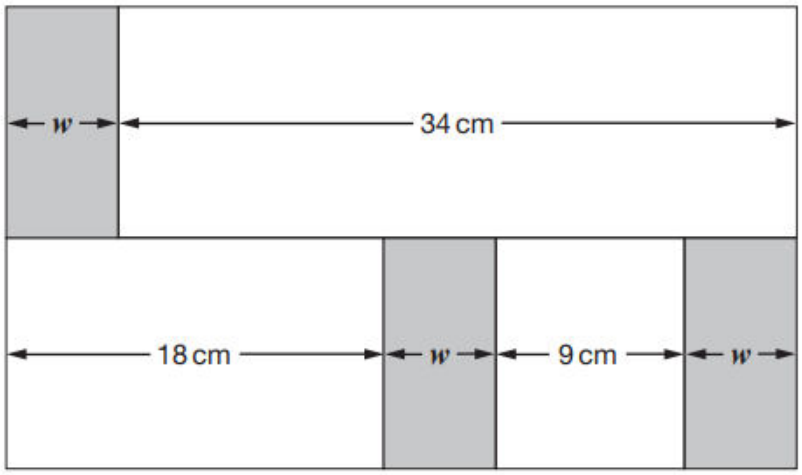
cm

1 mark

Key Stage 2: 2017 Paper 3 Reasoning

2.

22 In this diagram, the shaded rectangles are all of equal width (w).



Not to scale

Calculate the width (w) of one shaded rectangle.

Show your method

cm

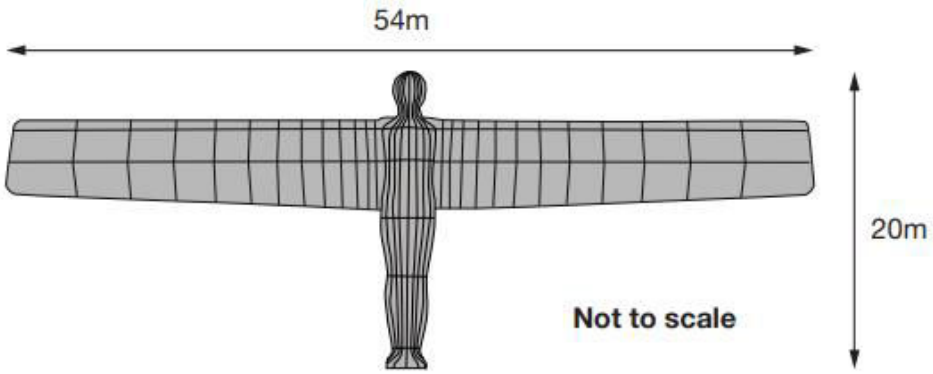
2 marks

Key Stage 2: 2018 Paper 3 Reasoning

1.

9 The Angel of the North is a large statue in England.

It is 20 metres tall and 54 metres wide.



Ally makes a scale model of the Angel of the North.

Her model is 40 centimetres tall.

How **wide** is her model?

cm

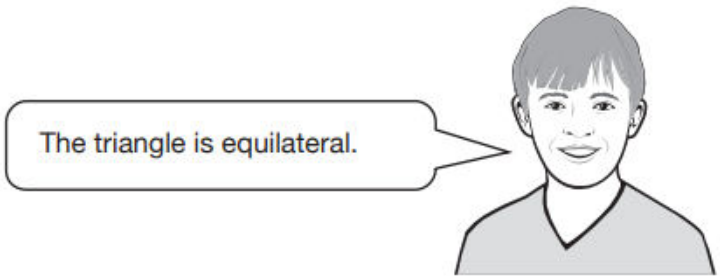
1 mark

Key Stage 2: 2018 Paper 3 Reasoning

2.

14 Two of the angles in a triangle are 70° and 40°

Jack says,



Explain why Jack is **not** correct.

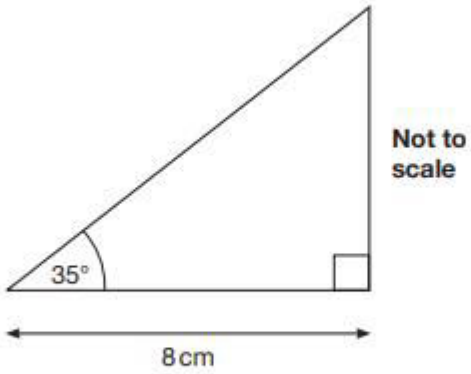
1 mark

Key Stage 2: 2019 Paper 2 Reasoning

1.

13 Here is a sketch of a triangle.

It is not drawn to scale.



Not to scale

Draw the full-size triangle **accurately** below.

Use an angle measurer (protractor) and a ruler.

One line has been drawn for you.

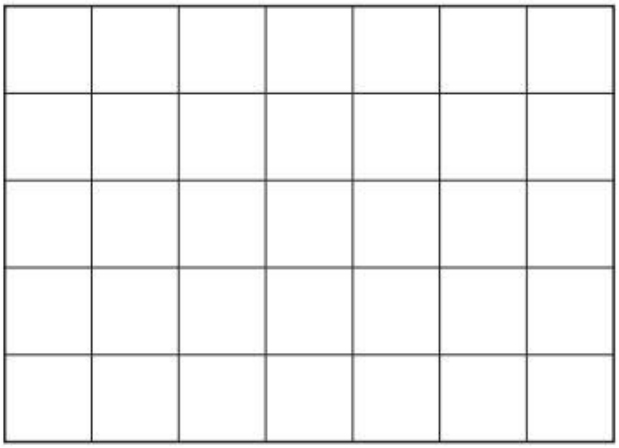
8 cm

2 marks

Key Stage 2: 2019 Paper 2 Reasoning

2.

21 Adam has this rectangular piece of card. It is marked with grid lines.



1 mark

Adam makes two straight cuts along the grid lines.

The two cuts divide the rectangle into 3 shapes:

- 2 squares of **different** size, and
- 1 rectangle.

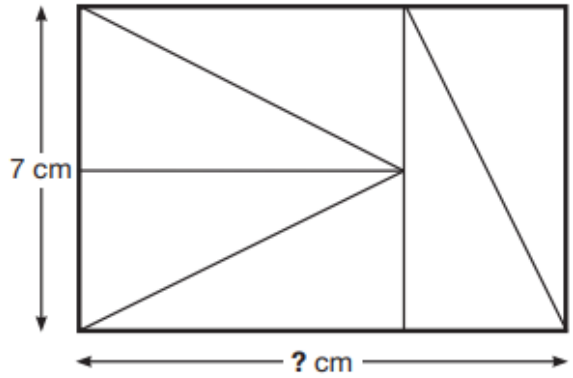
Using the grid lines, draw **two** lines that show where Adam could have made his cuts.

Use a ruler.

Key Stage 2: 2019 Paper 3 Reasoning

1.

22 Six identical right-angled triangles are arranged to make a rectangle.



Not actual size

Calculate the **length** of the rectangle.

cm

1 mark