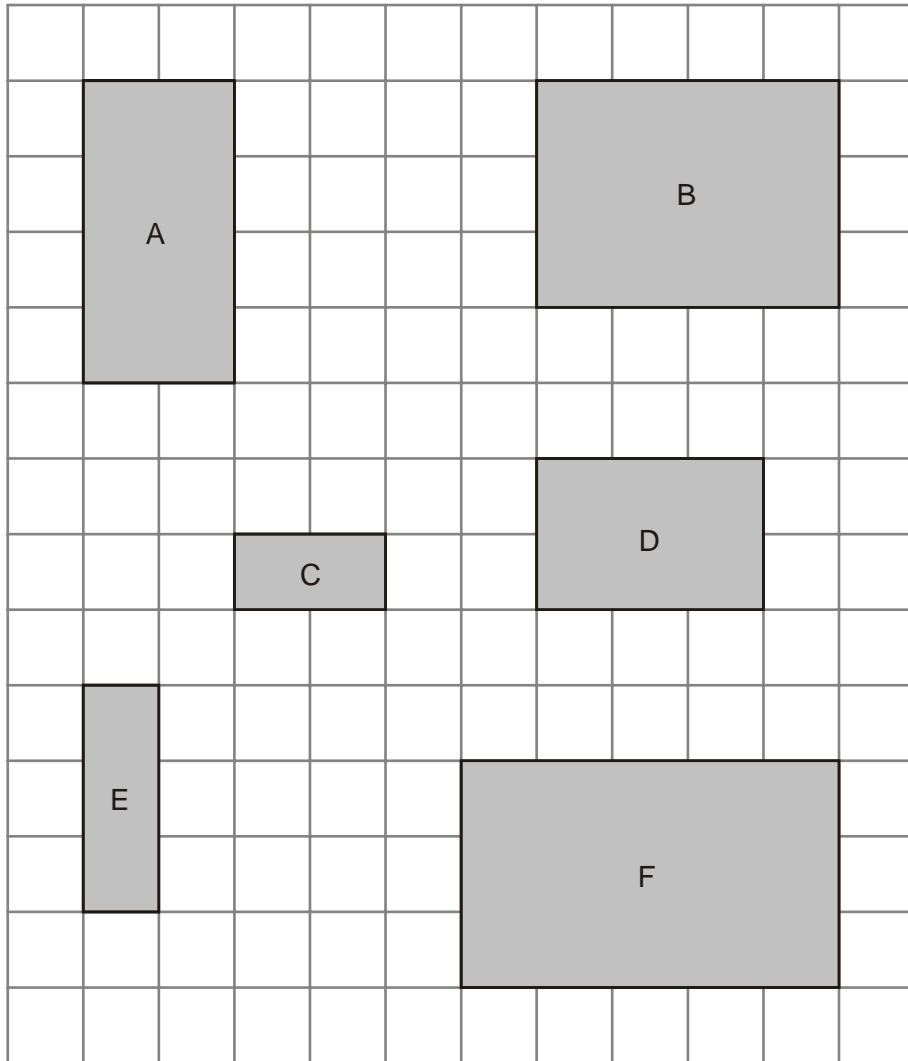



**SHAPE – level 4 questions**

1. Here are six rectangles on a grid.



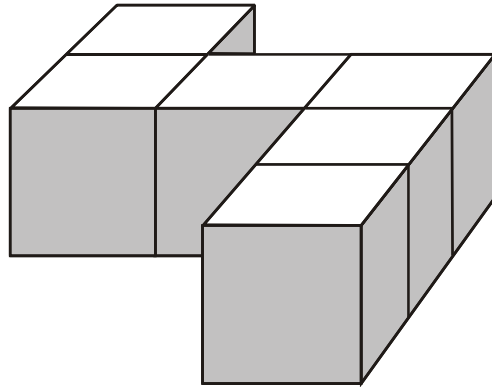
Which **two** rectangles fit together, without overlapping, to make a **square**?

 ..... and .....

1 mark

2. Emily has 6 cubes.

She sticks them together to make this model.



She paints the sides of the model grey all the way round.

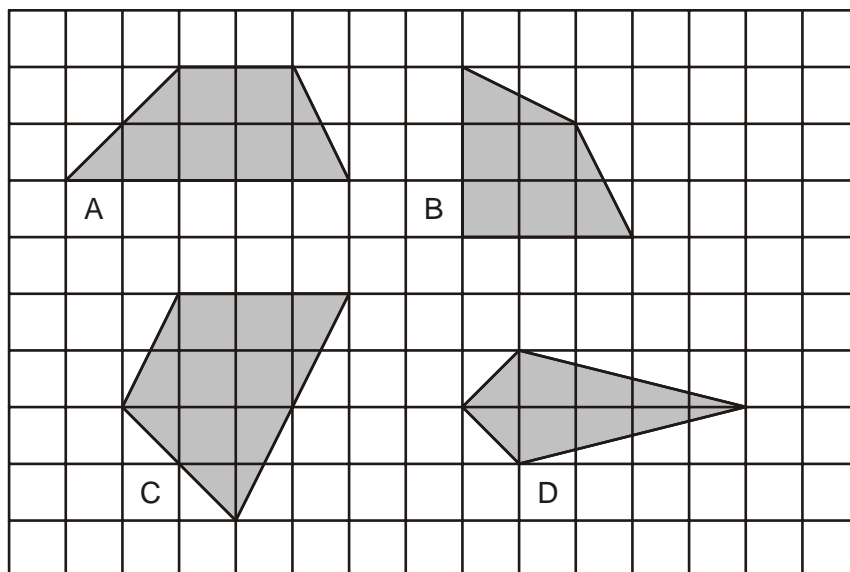
She leaves the top and the bottom of the model white.

How many of the cubes in the model have **exactly two** faces painted grey?



1 mark

3. Here are some shapes on a grid.



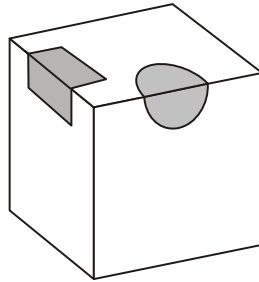
Write the letter of each shape that has one pair of parallel sides.



.....

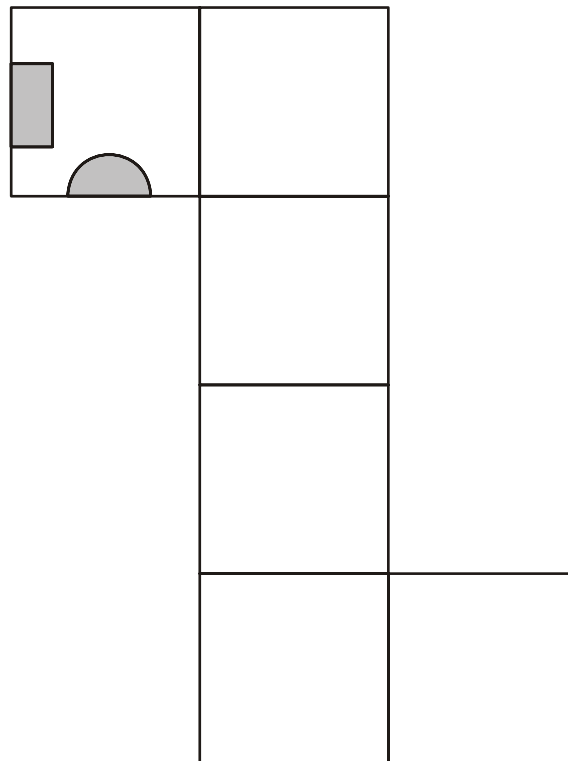
1 mark

4. A cube has shaded shapes on three of its faces.



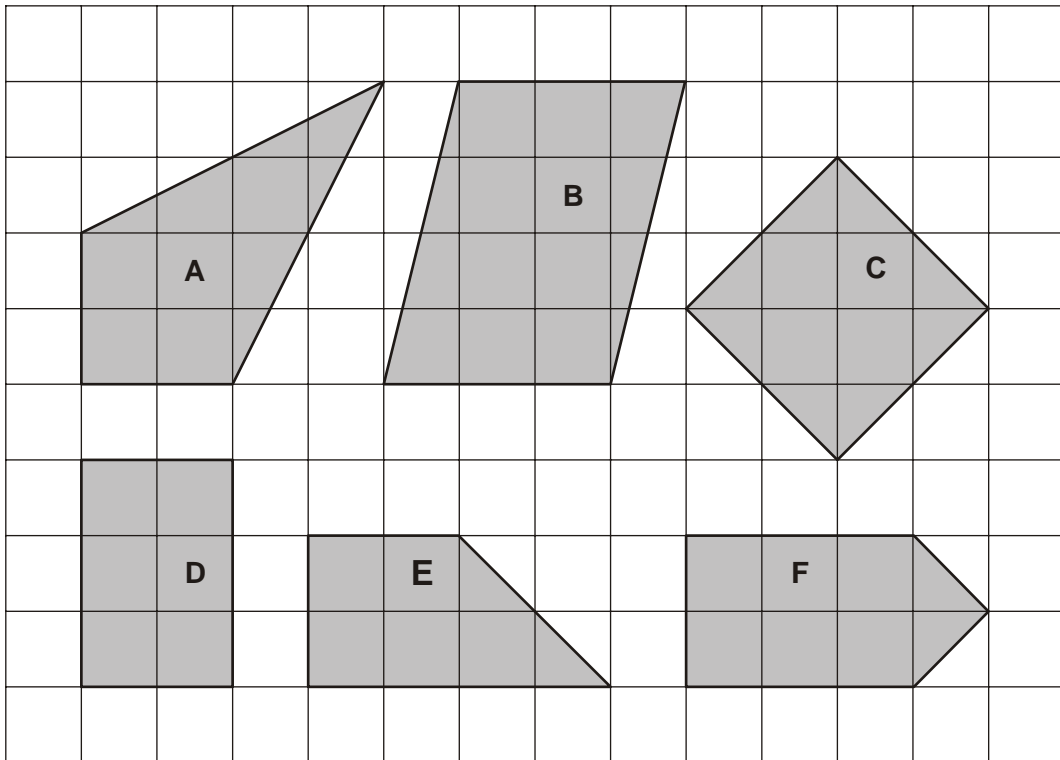
Here is a net of the cube.

Draw in the two missing shaded shapes.



1 mark

5. Look at these shapes.



Complete the sentences below.

One has been done for you.

..... **A** ..... is a kite



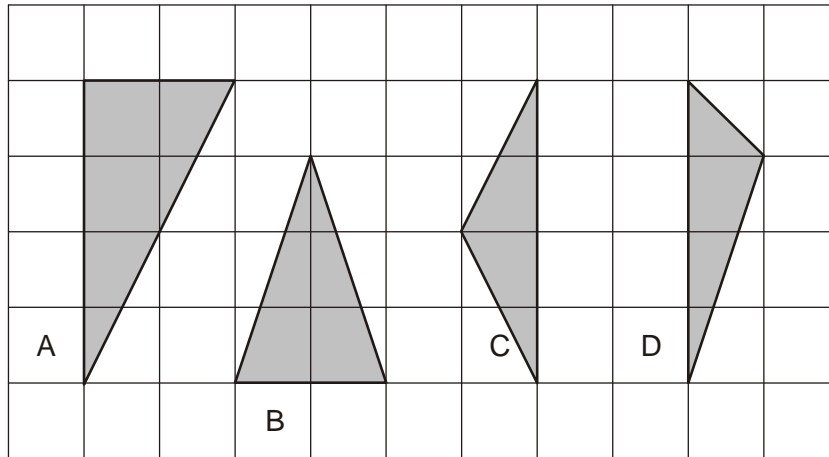
..... is not a quadrilateral

..... has only 2 right angles


..... has 2 acute angles

2 marks

6. Here are four triangles on a square grid.



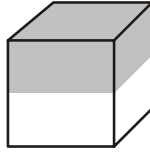
Write the letters of the **two isosceles** triangles.

 ..... and .....

1 mark

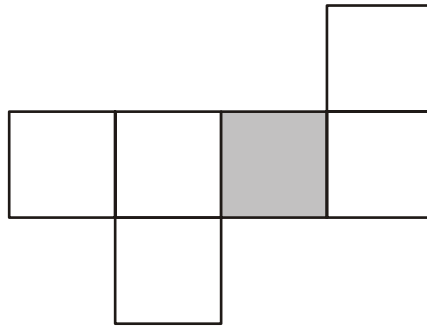
7. Here is a cube.

The cube is shaded all the way round so that the top half is grey and the bottom half is white.



Here is the net of the cube.

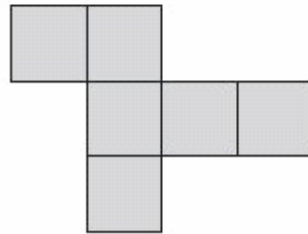
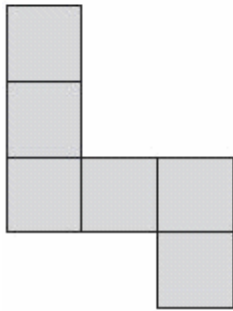
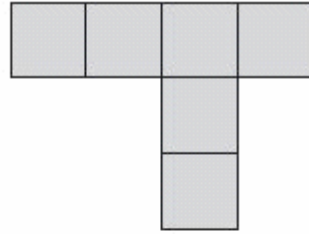
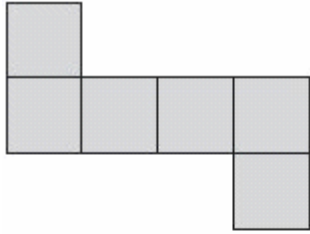
Complete the shading



2 marks

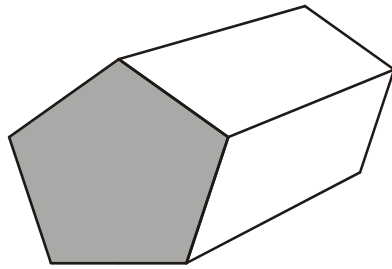
8. Here are four diagrams.

On each one put a tick (✓) if it is a net of a cube.  
Put a cross (✗) if it is not.

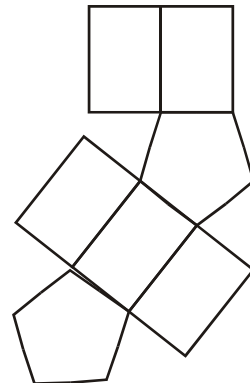
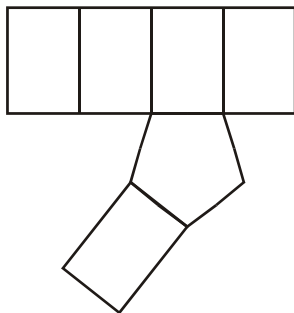
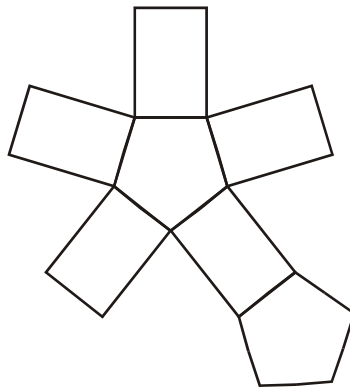
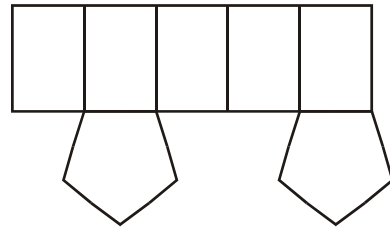
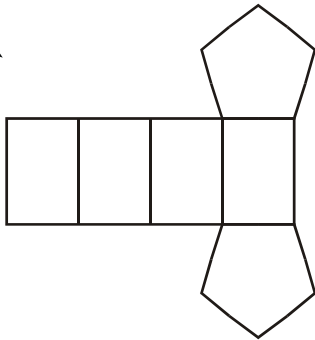


2 marks

9. This is a drawing of a pentagonal prism.



Tick (✓) the one shape that is a net for the pentagonal prism.

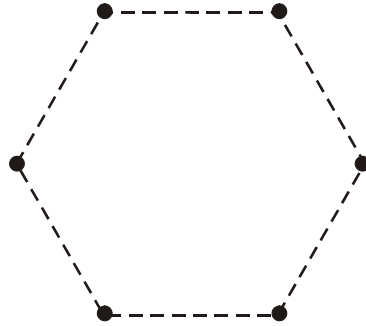


1 mark

10. Here is a regular hexagon.

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

Use a ruler.

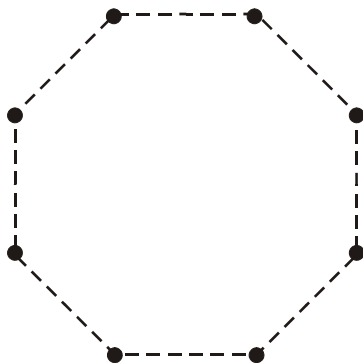


1 mark

Here is a regular octagon.

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

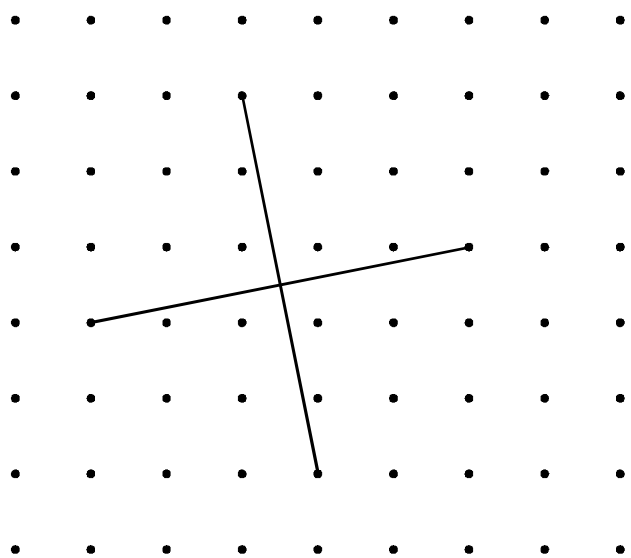
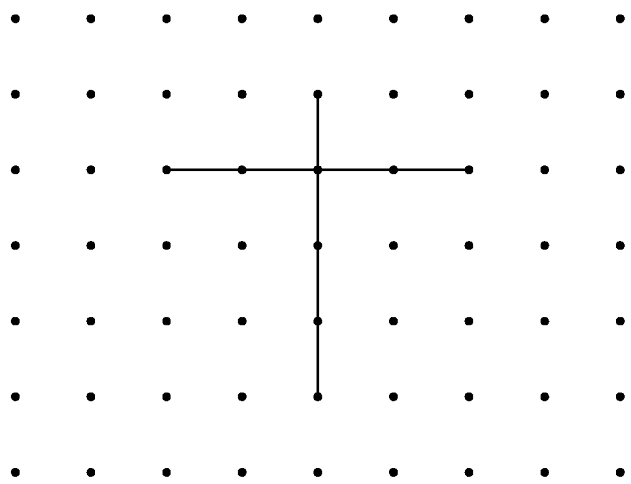
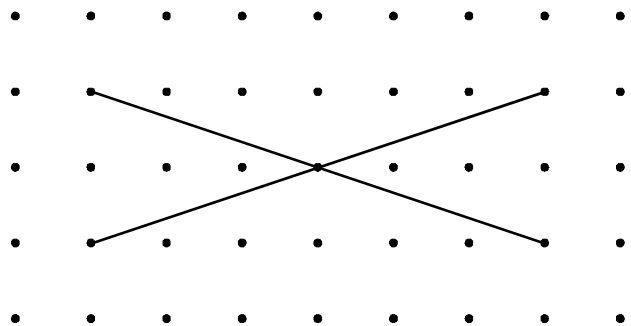
Use a ruler.



1 mark

11. These diagrams show the **diagonals** of three **quadrilaterals**.

Write the names of the quadrilaterals in the boxes.

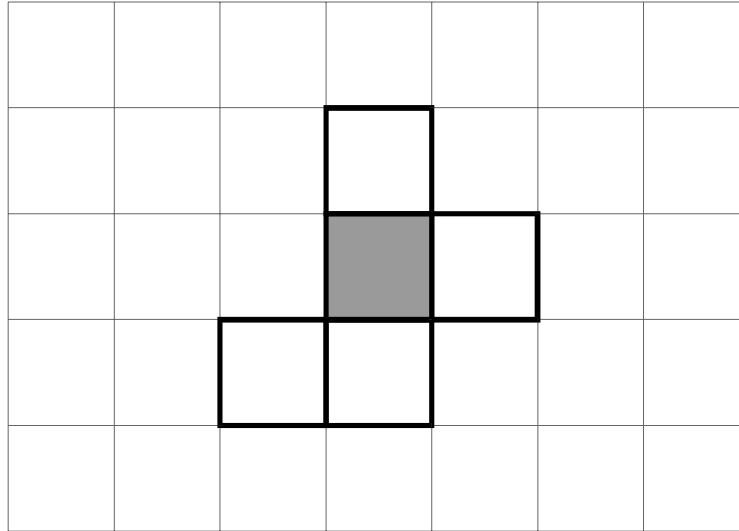


2 marks

12. Here is the net of a cube with no top.

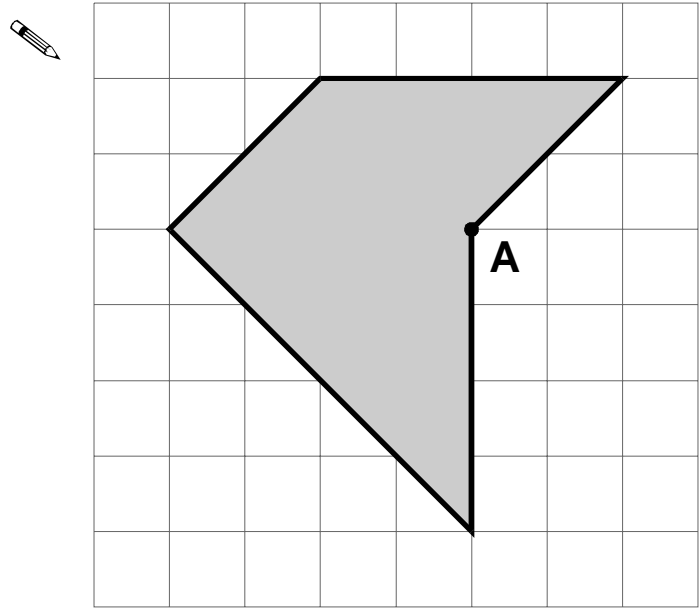
The shaded square shows the bottom of the cube.

Draw an extra square to make the net of a cube which does have a top.



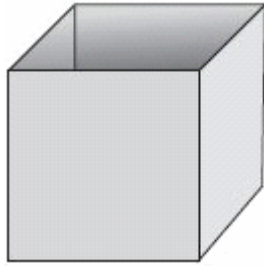
1 mark

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



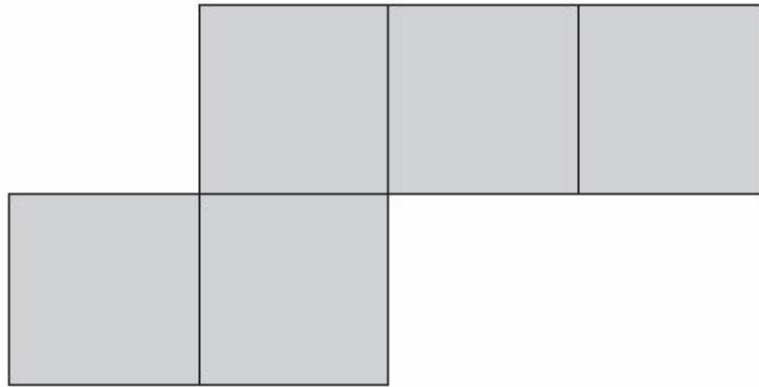
1 mark

14. Here is an **open top** cube.



Here is the net from which it is made.

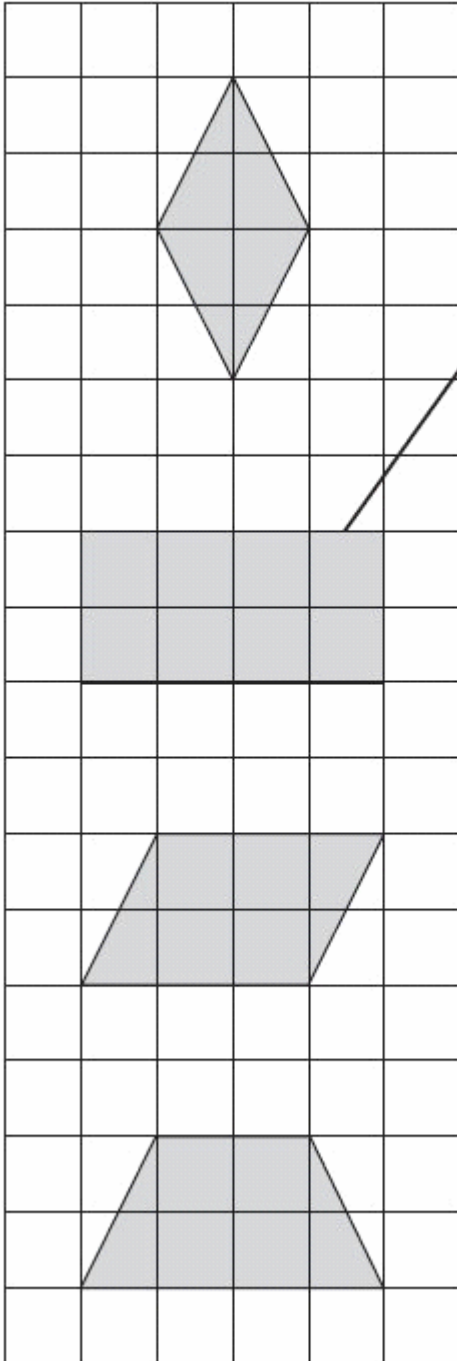
Put a tick (✓) on the square which is its **base**.



1 mark

15. Match each quadrilateral to the correct description.

One has been done for you.



2 pairs of sides equal in length.  
4 right angles.

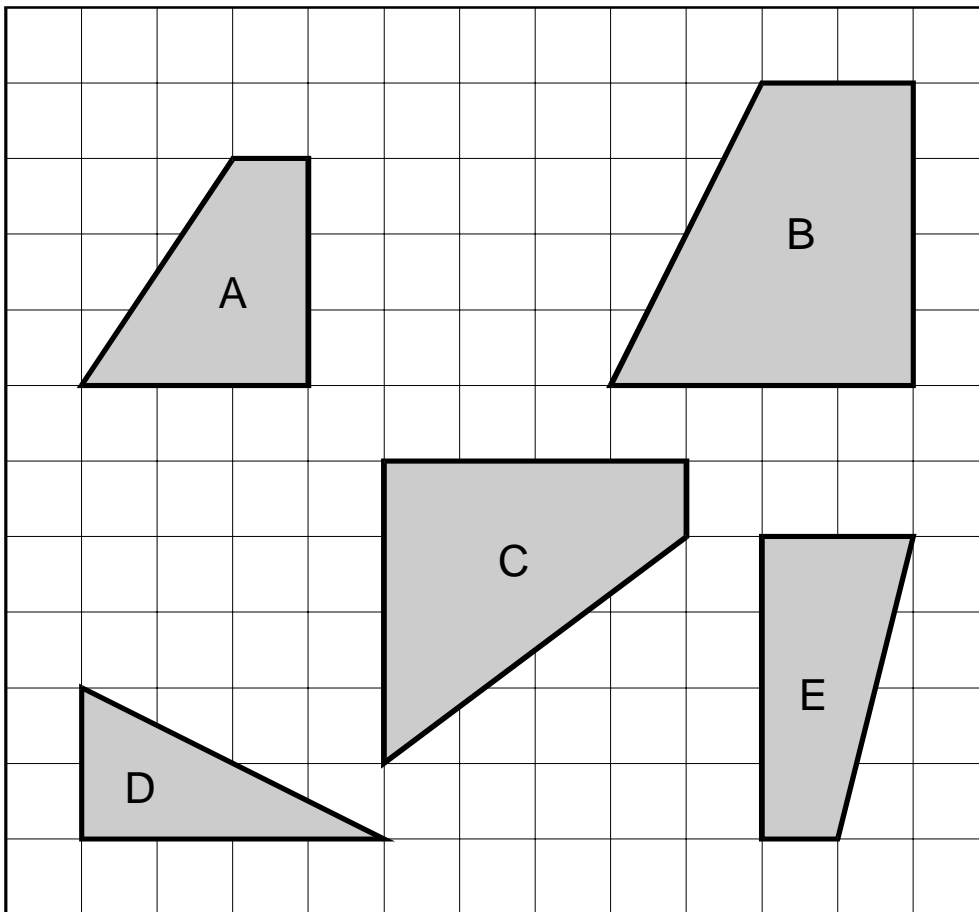
Only 1 pair of parallel sides.

Opposite sides are parallel.  
It has no lines of symmetry.


4 sides of equal length.  
Opposite angles are equal.

1 mark

16. Here are five shapes on a square grid.



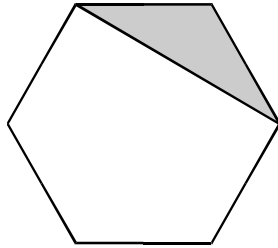
Which **two** shapes fit together to make a **square**?

 ..... and .....

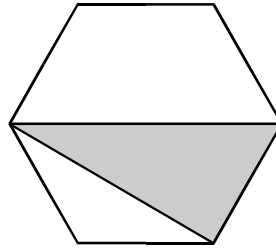
1 mark

17. These two shaded triangles are each inside a regular hexagon.

Under each hexagon, put a ring around the correct name of the shaded triangle.



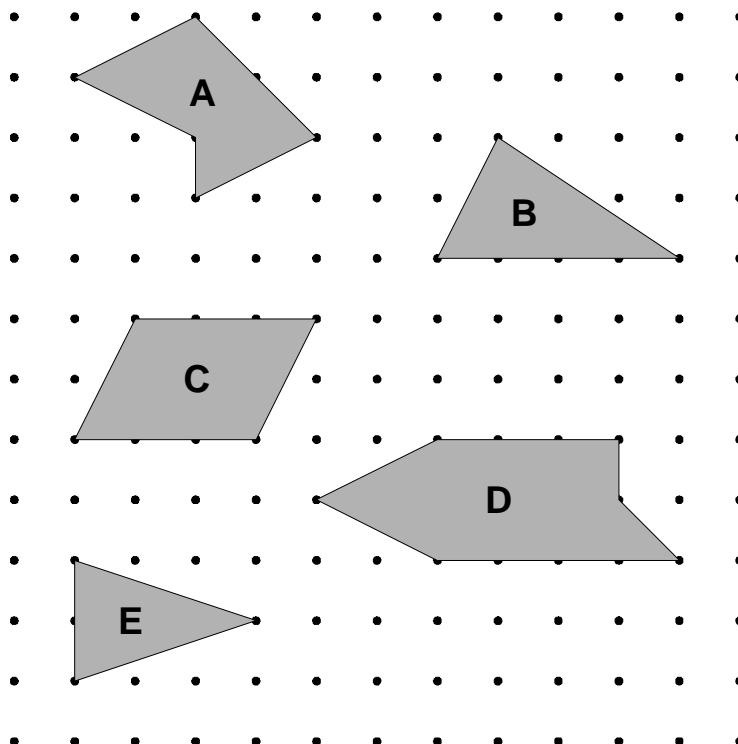
- equilateral
- isosceles
- scalene



- equilateral
- isosceles
- scalene

1 mark

18. Here are five shapes on a square grid.



Write in the missing letters.



Shape

has two pairs of parallel sides.

1 mark



Shape

is a pentagon.

1 mark



Shape

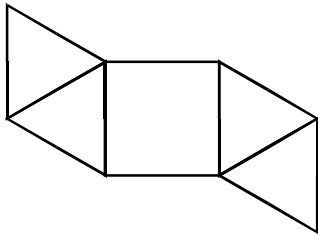
has reflective symmetry.

1 mark

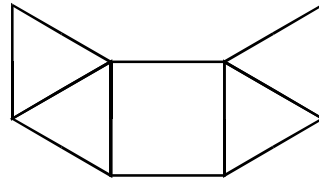
19. Look at each of these diagrams.

Put a tick (✓) if it is the **net of a square based pyramid**.

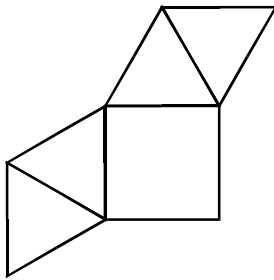
Put a cross (✗) if it is **not**.



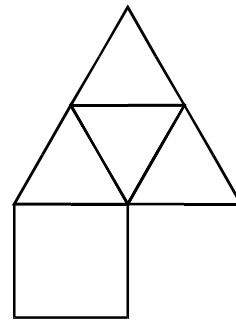
.....



.....



.....



.....

2 marks

20. The area of a rectangle is  $16\text{cm}^2$ .

One of the sides is 2cm long

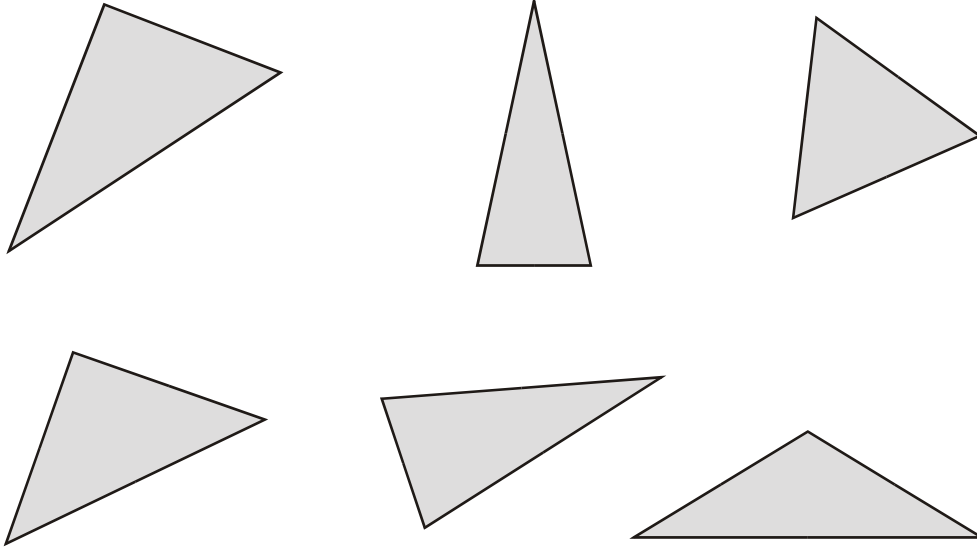
What is the perimeter of the rectangle?



1 mark

21. Here are six triangles. One of them is an **equilateral** triangle.

Put a tick (✓) in the equilateral triangle.



1 mark

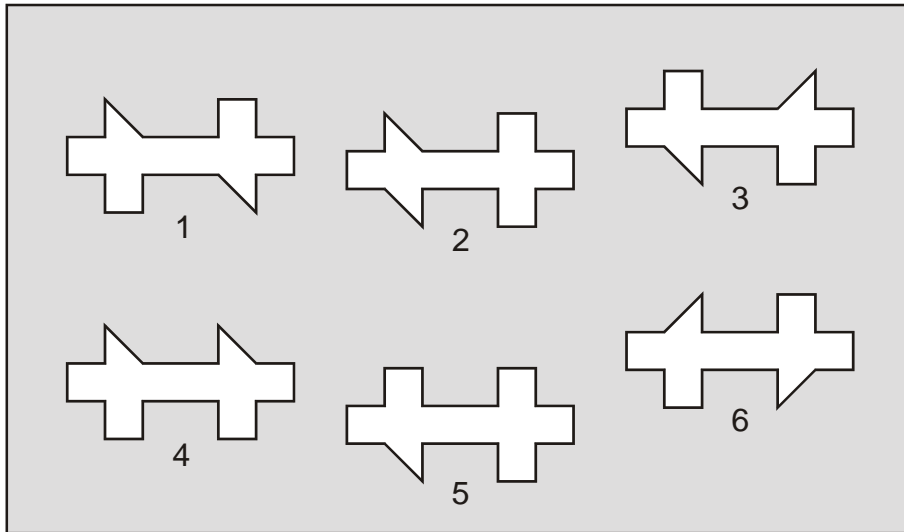
Write **one property** which makes **equilateral** triangles **different** from **all** other triangles.



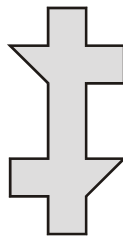
.....  
.....  
.....

1 mark

22. This board has six holes cut in it.

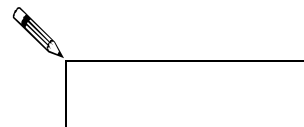


Here is a shape cut out of card.



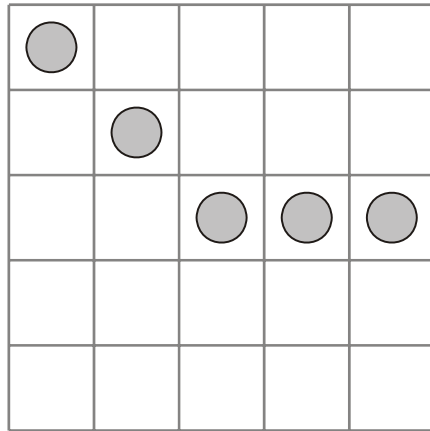
Which hole will the shape fit exactly into?

You may use tracing paper.



1 mark

23. Draw **two** more circles on this grid to make a design that has a line of symmetry.

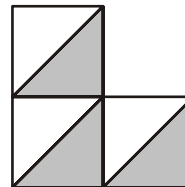
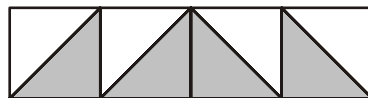
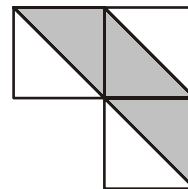
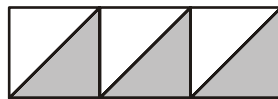
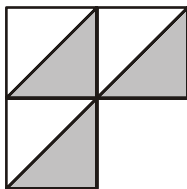


1 mark

24. Here are five patterns.

For each pattern put a tick (✓) if it has a line of symmetry.

Put a cross (✗) if it does not.

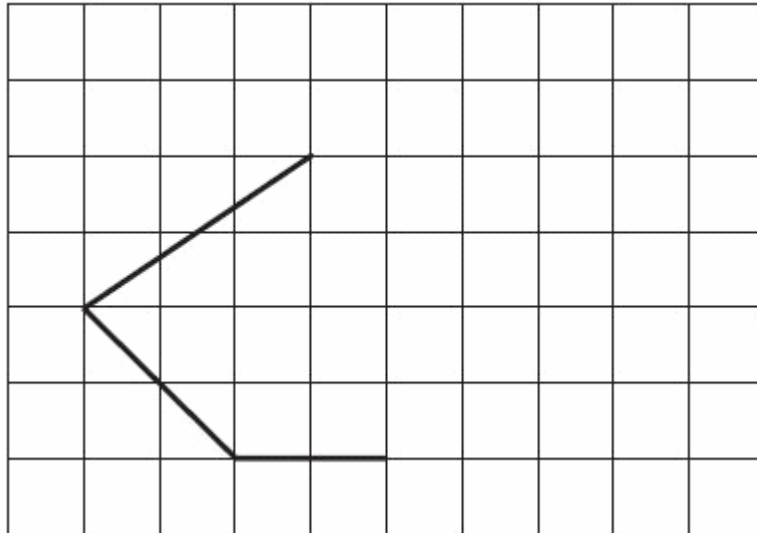


2 marks

25. Here is part of a shape on a square grid.

Draw **two more** lines to make a shape which has a line of symmetry.

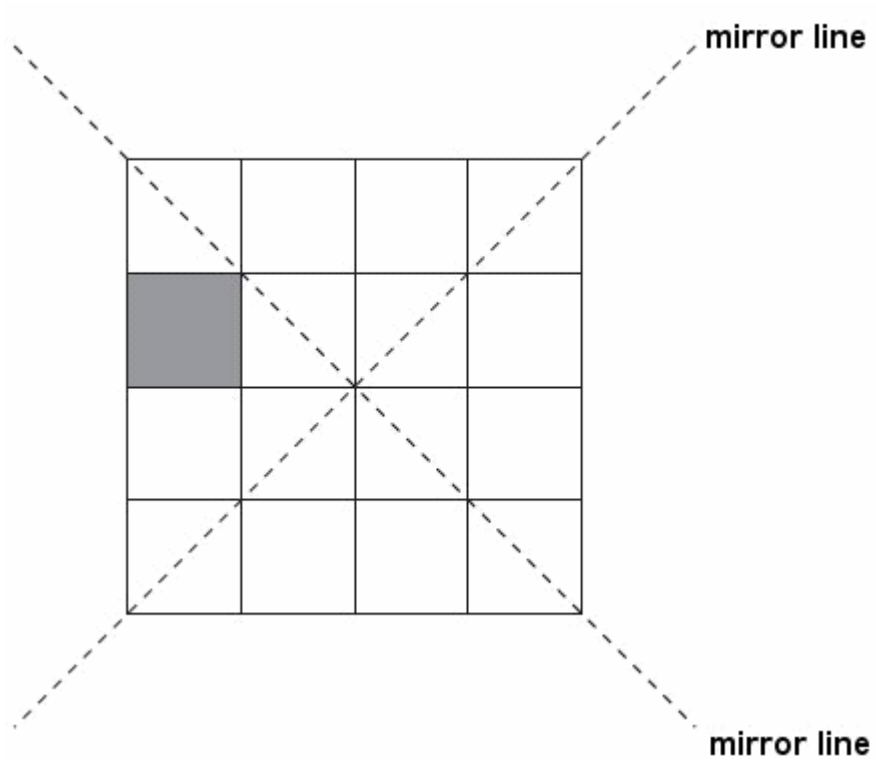
Use a ruler.



1 mark

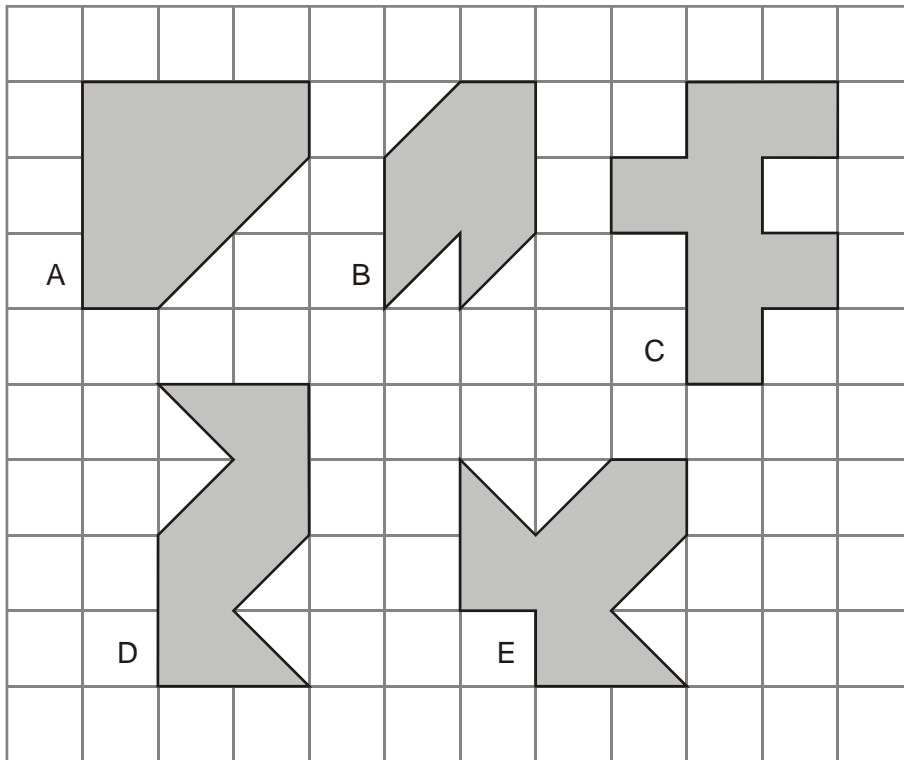
26. Here is a shaded square on a grid.

Shade in **3 more squares** so that the design is symmetrical in **both** mirror lines.




1 mark

27. Here are five shapes on a square grid.

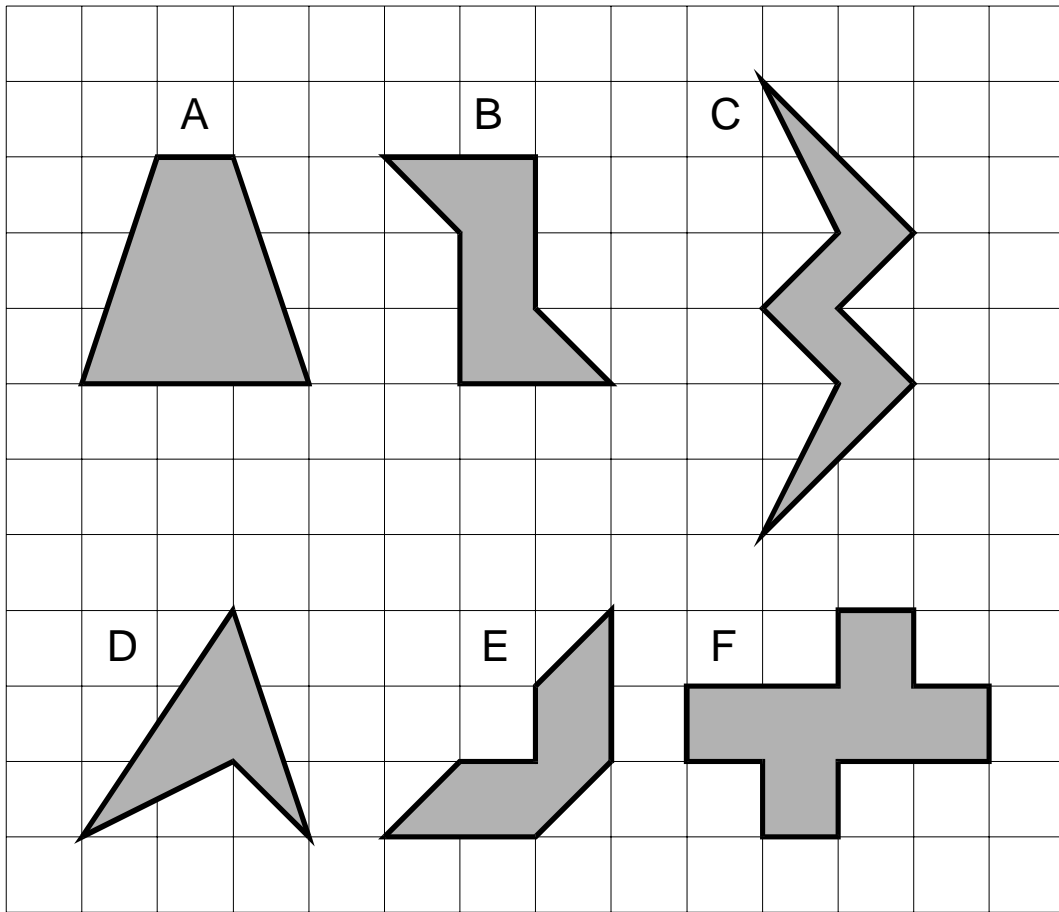


Write the letters of the **two** shapes which have a line of symmetry.

 ..... and .....

2 marks

28. Here are some shaded shapes on a grid.



Which **three** shapes have **reflective symmetry**?

You may use a mirror or tracing paper.



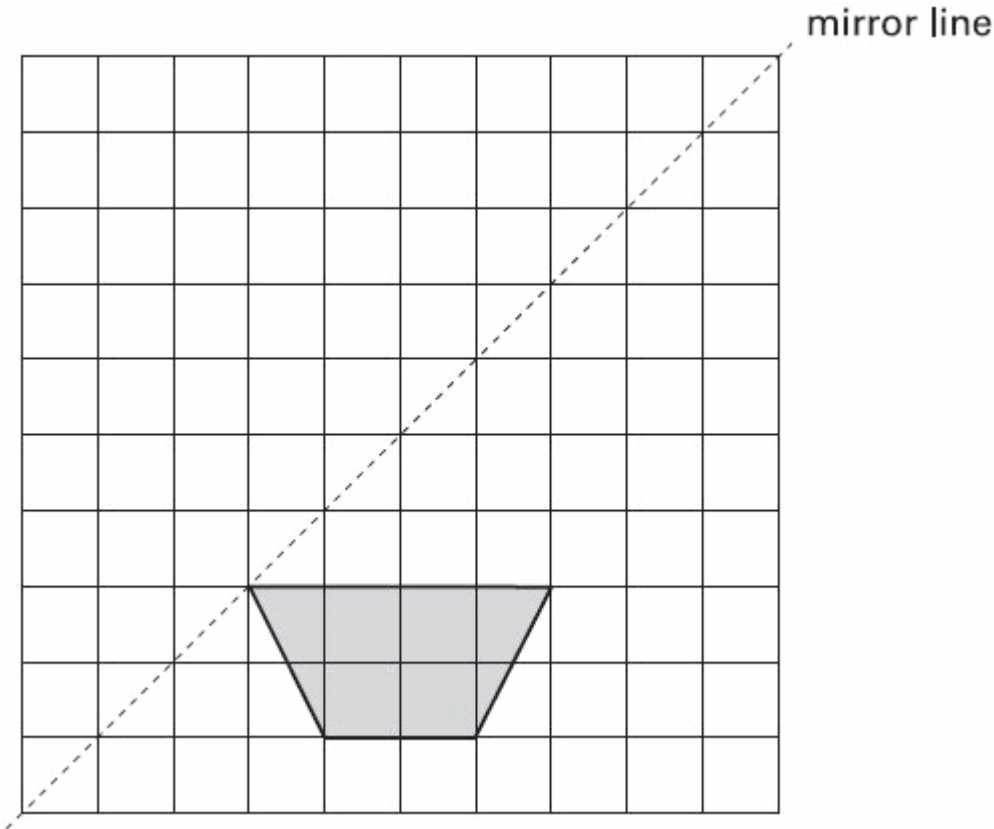
.....

.....

.....

2 marks

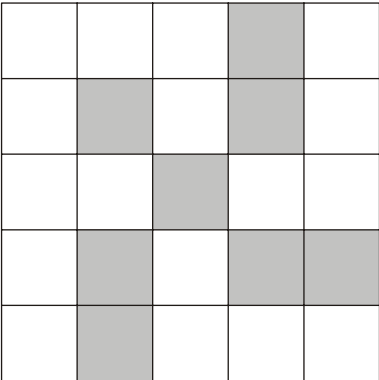
29. Draw the reflection of this shape.



1 mark

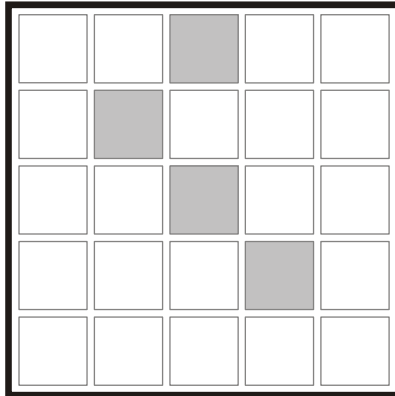
30. Shade in **one more** square so that this design has **rotational** symmetry of **order 4**.

You may use tracing paper



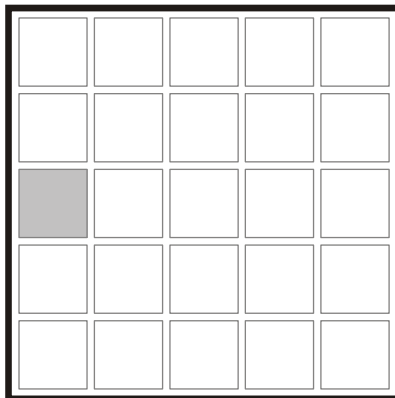
1 mark

31. Ben makes this design on a grid.



He rotates the grid to a new position.

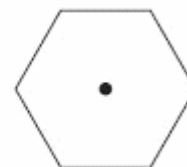
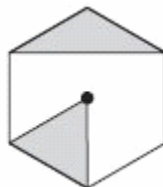
Shade in the missing parts of the design.



1 mark

32. This pattern is made by turning a shape clockwise through  $90^\circ$  each time.

Draw the two missing triangles on the last shape.



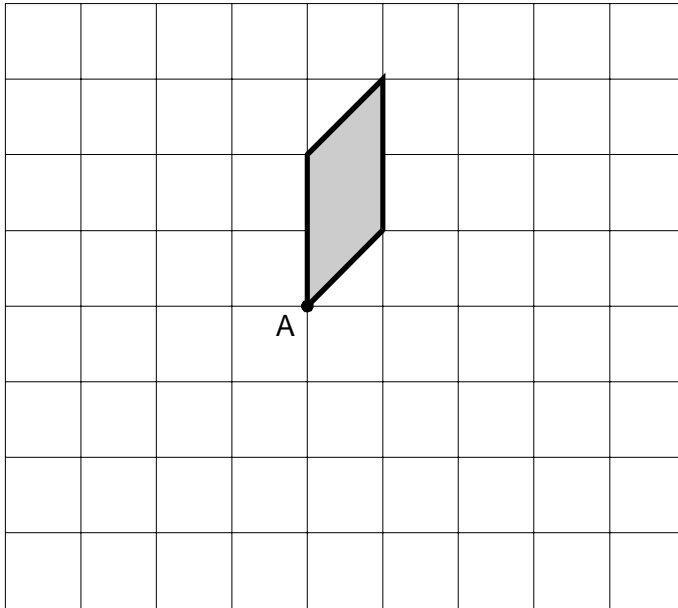
1 mark

33. Here is a shaded shape on a grid.

The shape is **rotated 90° clockwise** about point **A**.

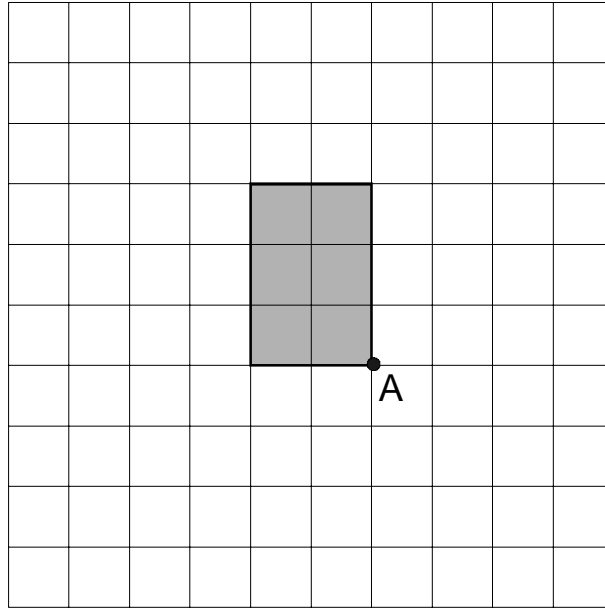
Draw the shape in its **new position** on the grid.

You may use tracing paper.



2 marks

34.



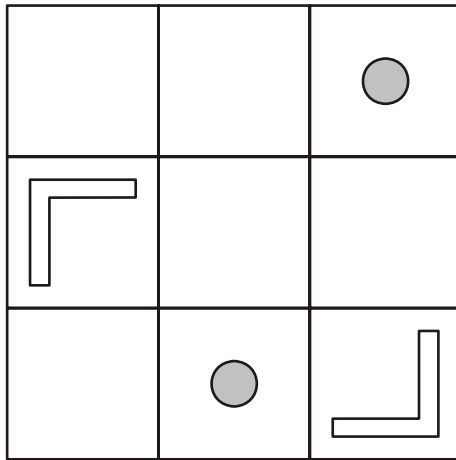
This rectangle is **rotated 90° clockwise** about point **A**.

Draw the rectangle in its new position.

You may use tracing paper.

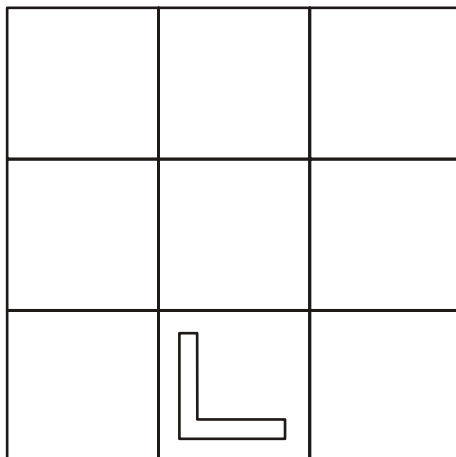
1 mark

35. There are four shapes on this diagram.



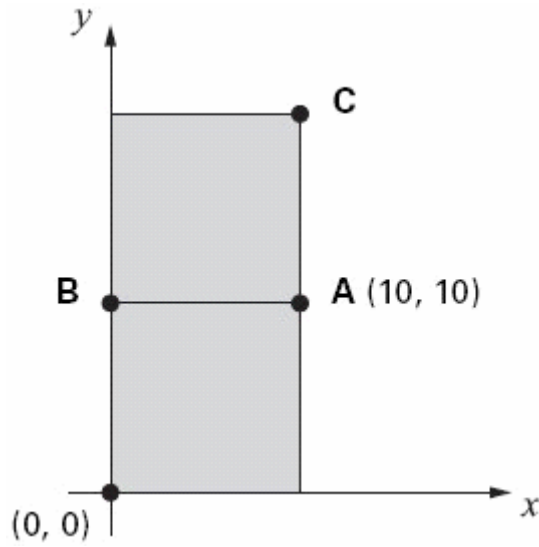
The diagram is turned to the new position below.

Draw the three missing shapes.



2 marks

36. The diagram shows two identical squares.



A is the point (10,10)

What are the coordinates of B and C?



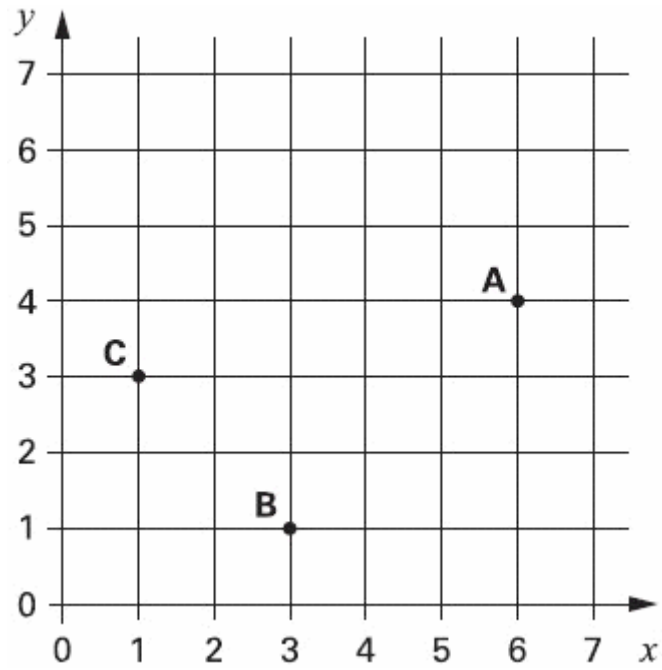
B is (      ,      )

1 mark

C is (      ,      )


1 mark

37.



A, B and C are three corners of a rectangle.

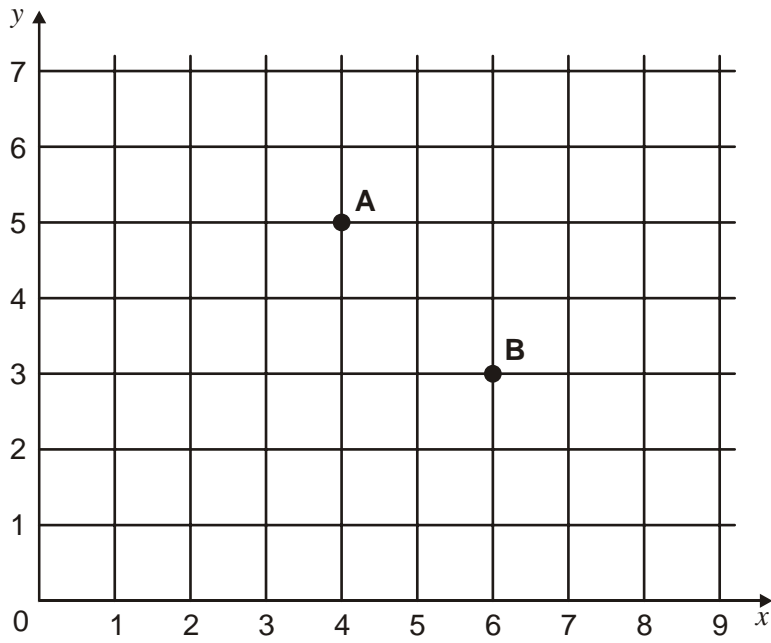
What are the coordinates of the fourth corner?



1 mark

38. **A**, **B**, **C** and **D** are the vertices of a rectangle.

**A** and **B** are shown on the grid.



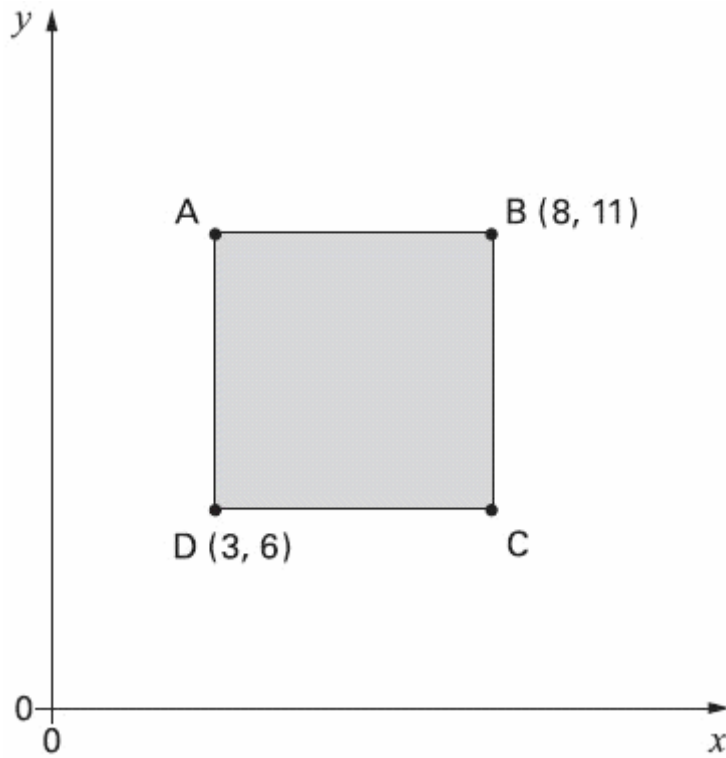
**D** is the point ( 3, 4)

Write the coordinates of point **C**.

( , )

1 mark

39. Here is a shaded square.



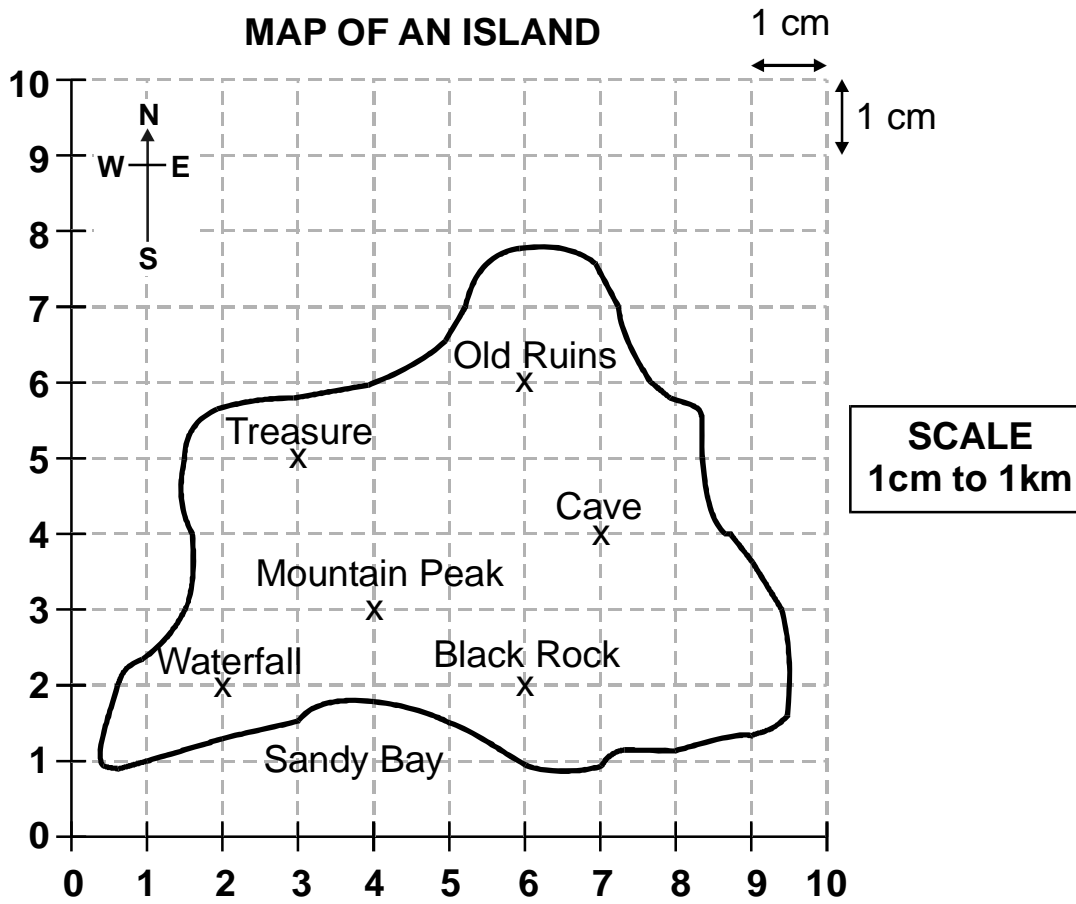
Write the coordinates for point A.



A = (      ,      )

1 mark

40.

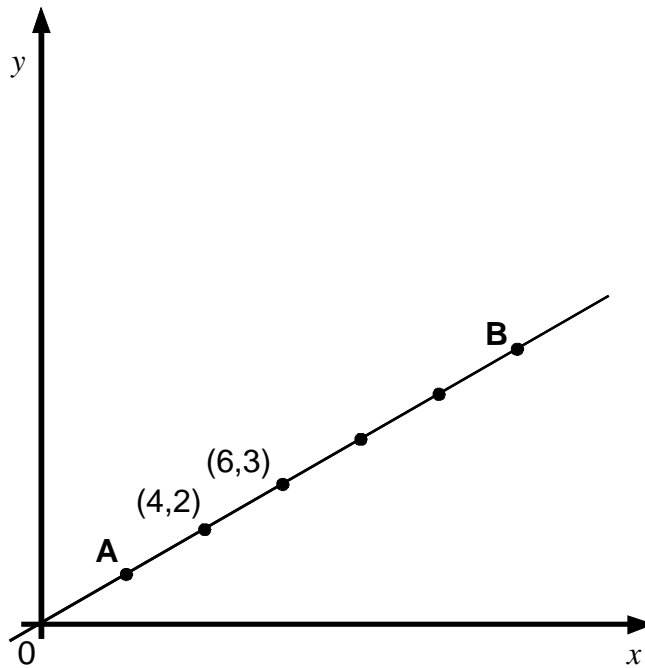


The Cave has co-ordinates **(7 , 4)**.

What are the co-ordinates of the Treasure? ( , )

1 mark

41. Here is a graph.



The dots (●) on the line are **equally spaced**.

What are the **coordinates** of the point **A**?

 (   ,   )

1 mark

Megan says,

***'The point B has coordinates (11,5).'***

Use the graph to explain why she **cannot** be correct.



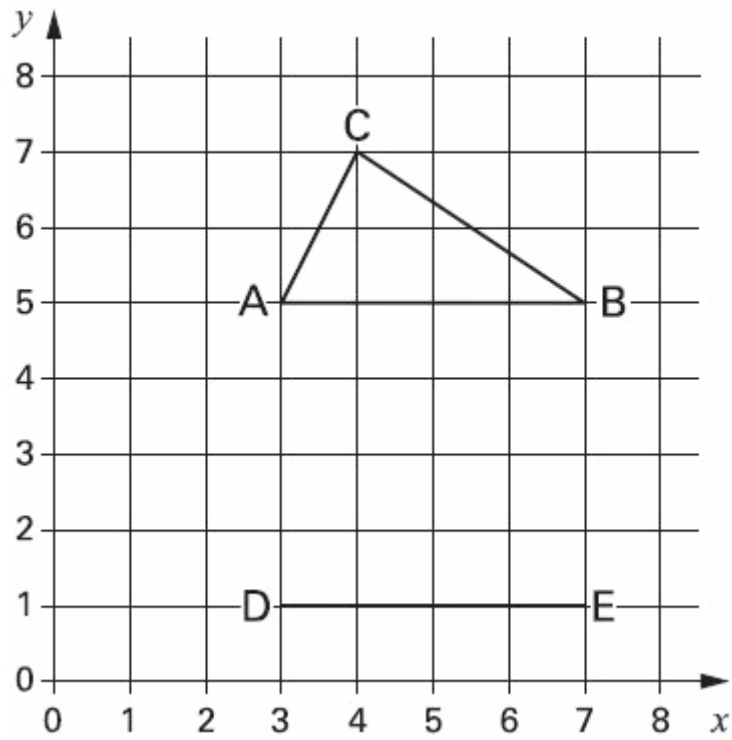
.....

.....

.....


1 mark

42. Kyle has drawn triangle **ABC** on this grid.



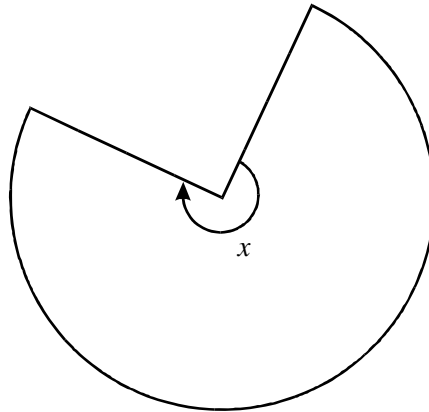
Holly has started to draw an **identical** triangle **DEF**.

What will be the coordinates of point **F**?



1 mark

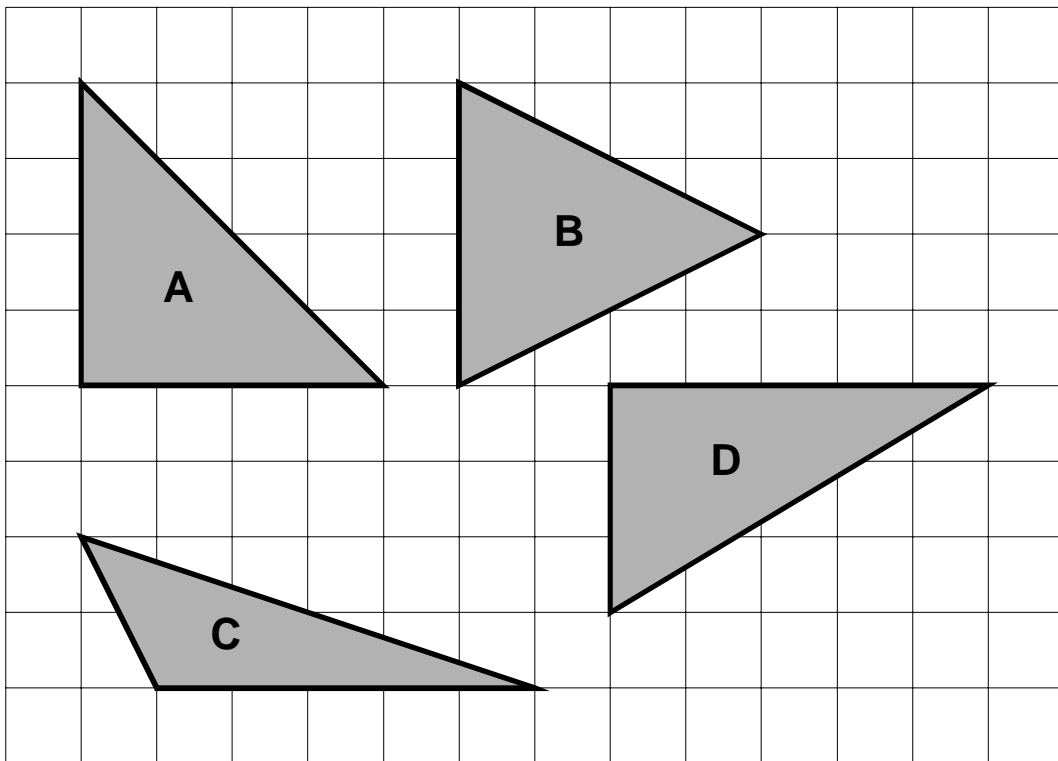
43. This shape is **three-quarters of a circle**.



How many degrees is **angle  $x$** ?

1 mark

44. Here are four triangles drawn on a square grid.



Write the letter for each triangle in the correct region of the sorting diagram.

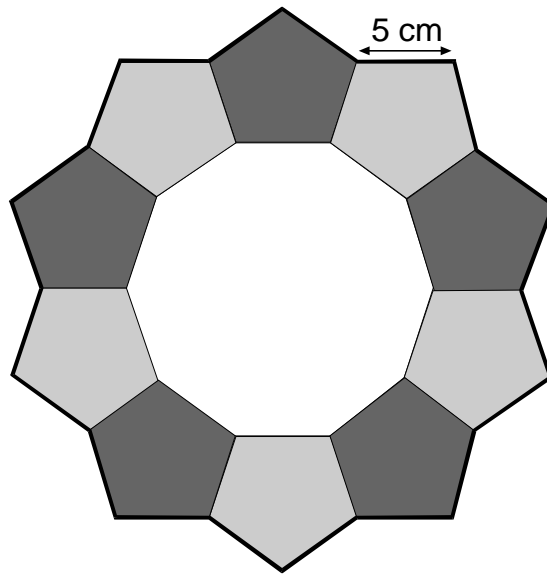
One has been done for you.




	has a <b>right</b> angle	has an <b>obtuse</b> angle	has <b>3 acute</b> angles
is isosceles	<b>A</b>		
is <b>not</b> isosceles			

2 marks

45. This ring is made of **regular pentagons**, with sides of **5 centimetres**.



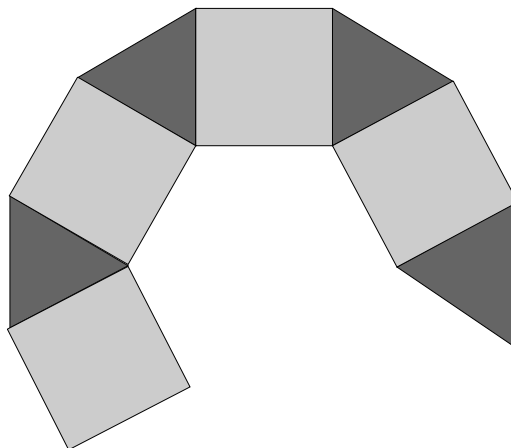
What is the **length** of the **outer edge** of the ring?

  cm

1 mark

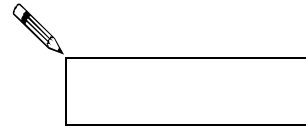
Here is part of a new ring.

It is made of **squares** and **triangles**.



The pattern is continued to complete the ring.

What is the **total** number of **squares** used in the complete ring?

A small icon of a pencil pointing towards the top-left corner of a rectangular box, indicating where to write the answer.

1 mark