2D & 3D Shapes KS2 SATS Standard Worksheet

1. This table shows information about four solid shapes.

Complete the table.

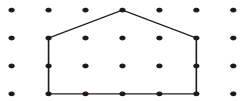
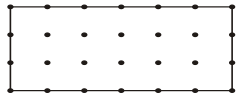
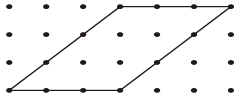
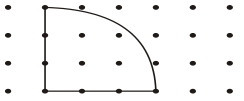
One has been done for you.

	number of **flat** surfaces	number of **curved** surfaces
sphere	0	1
cone		
cuboid		
cylinder		

2 marks

2. 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
	✗	✓
		
		
		

2 marks

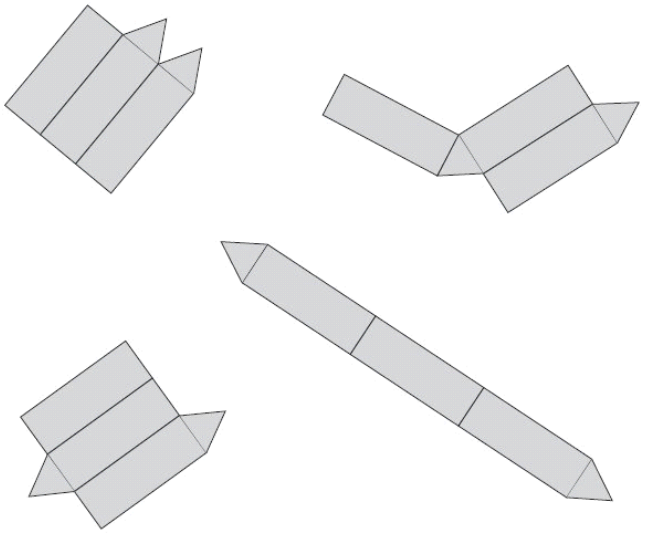
3. Complete the table.

	number of faces	number of edges
 cuboid	6	12

 square-based pyramid	5	

4. **Two** of these diagrams are nets for a triangular prism.

Put a tick (✓) in them.

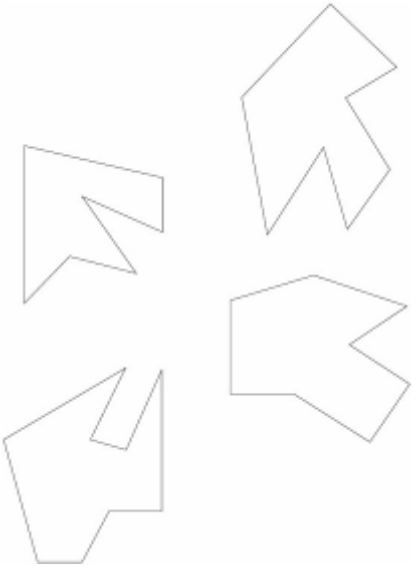


1 mark

5. Here are some shapes.

Two of the shapes are **octagons**.

Put a tick (✓) on them.

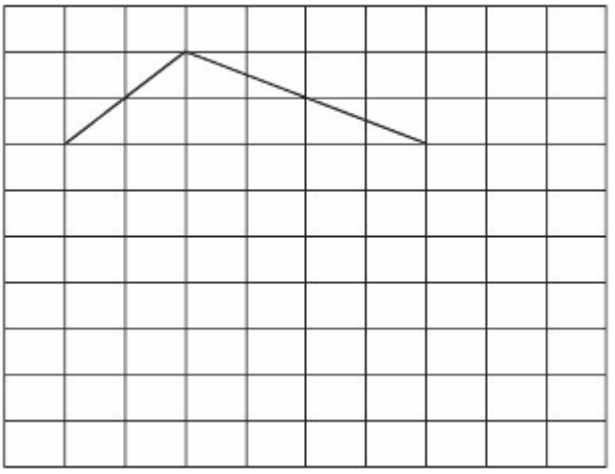


1 mark

6. The lines drawn on the grid are two sides of a **pentagon**.

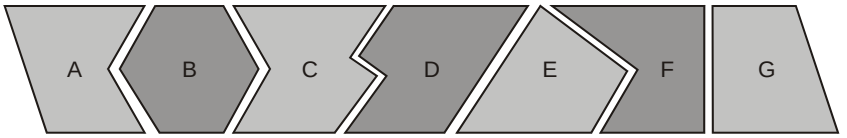
Complete the pentagon.

Use a ruler.



1 mark

7. Here are seven shapes.



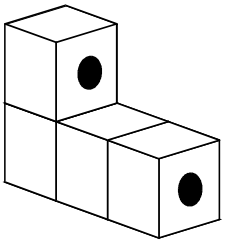
Write the letters of the two shapes which are **pentagons**.

..... and .....

1 mark

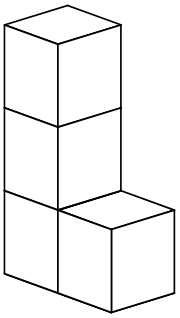
8. Tom makes this shape from four cubes stuck together.

Two circles are drawn on the shape.



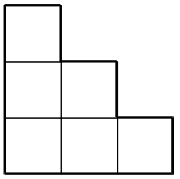
Tom moves the shape.

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



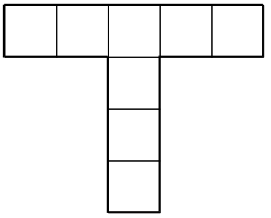
1 mark

9. Shade **one third** of this shape.



1 mark

Shade **one quarter** of this shape.



1 mark

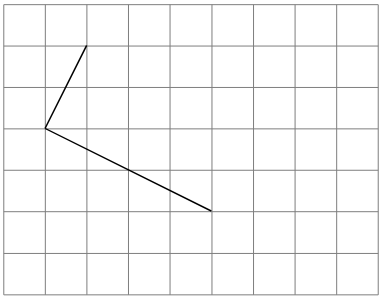
10. Complete the table.

shape	property of shape		
	4 sides only	**one or more right angles**	**two pairs of parallel sides**
	☒	☑	☒
	☐	☐	☐
	☐	☐	☐

2 marks

11. Draw **two more straight lines** to make a rectangle.

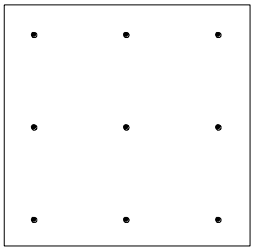
Use a ruler.



1 mark

12. On the grid join dots to make a triangle which does **not** have a **right angle**.

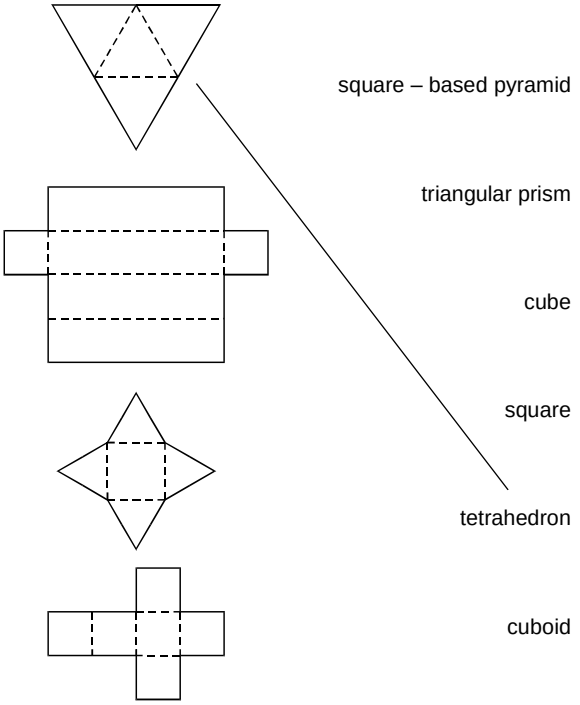
Use a ruler.



1 mark

13. These nets will fold to make 3-D shapes.

Match each net to the name of its shape.



square – based pyramid

triangular prism

cube

square

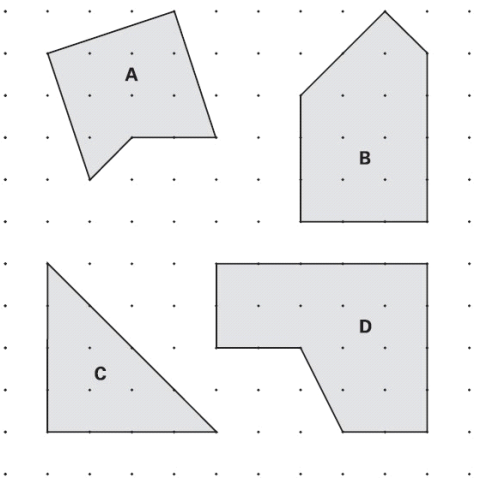
tetrahedron

cuboid

1 mark

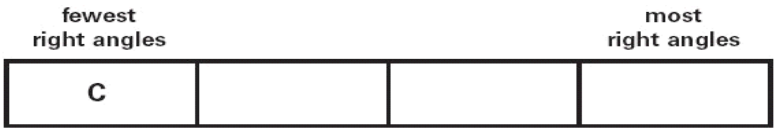
14. Here are four shapes.

They each have a different number of right angles.



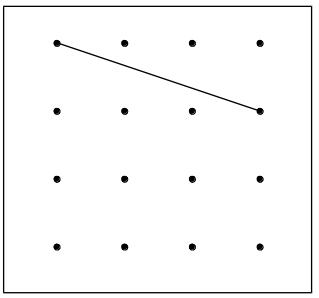
Write the letter for each shape in the correct order.

One has been done for you.



1 mark

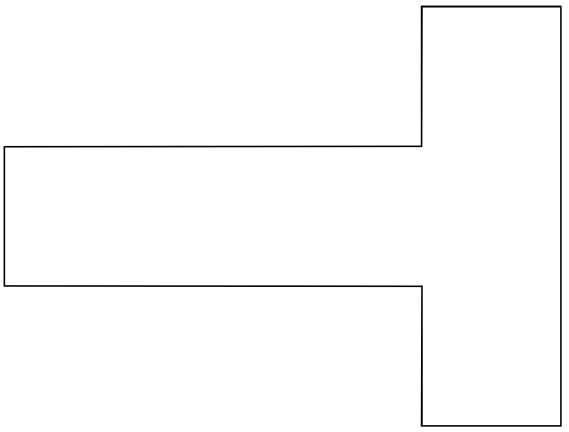
15. Use a ruler to draw **2 more lines** to make an **isosceles** triangle.



1 mark

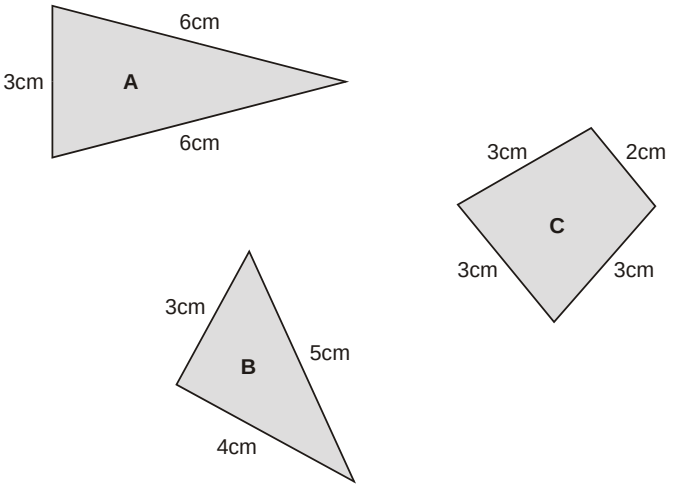
16. Draw in lines where you would fold this shape to make a cube.

Use a ruler to measure where they would go.



1 mark

17. Here are some shapes.



Write the letters **B** and **C** in the **sorting diagram** below to show where shapes **B** and **C** should go.

Shape **A** is done for you.

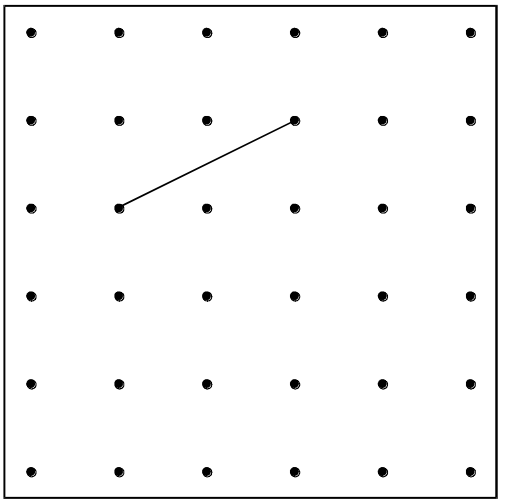
shapes	**no** sides equal	**only** 2 sides equal	**more than** 2 sides equal
3 sides		**A**	
more than 3 sides			

2 marks

18. The line on the grid is one side of a **square**.

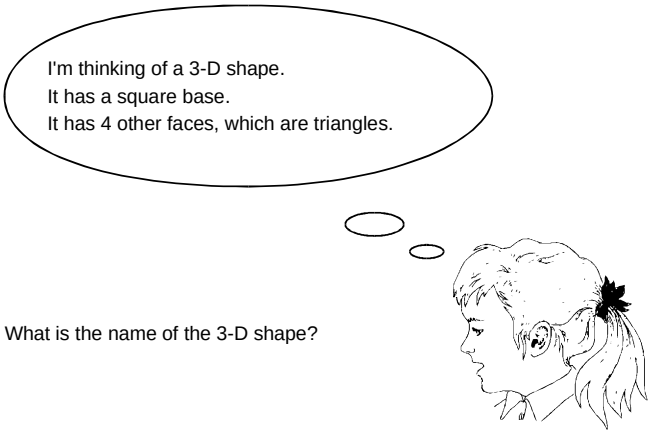
On the grid, draw the **other three sides** of the square.

Use a ruler.



1 mark

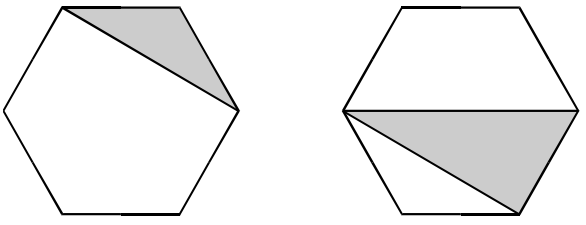
19.



1 mark

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

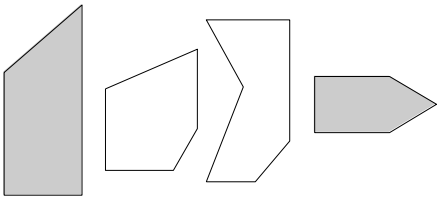
Under each hexagon, put a ring around the correct name of the shaded triangle.



equilateral	equilateral
isosceles	isosceles
scalene	scalene

1 mark

21. Here are 4 shapes.



Each shape has **two parallel sides**.

Write **TWO** other things which are the **same** about **ALL** the 4 shapes.

1 .....

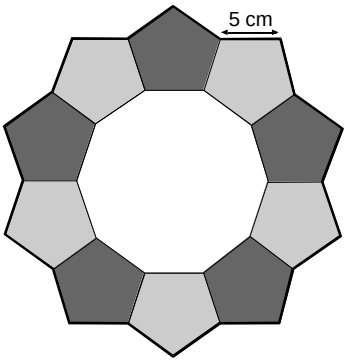
.....

2 .....

.....

2 marks

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



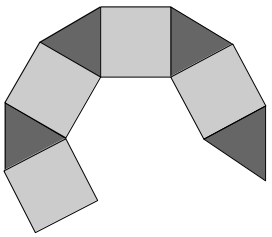
What is the **length** of the **outer edge** of the ring?

cm

1 mark

Here is part of a new ring.

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



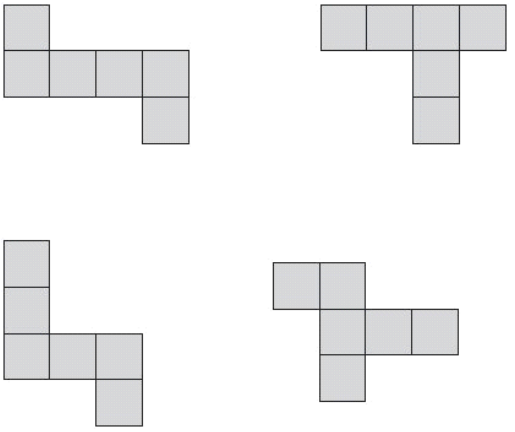
The pattern is continued to complete the ring.

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

1 mark

23. Here are four diagrams.

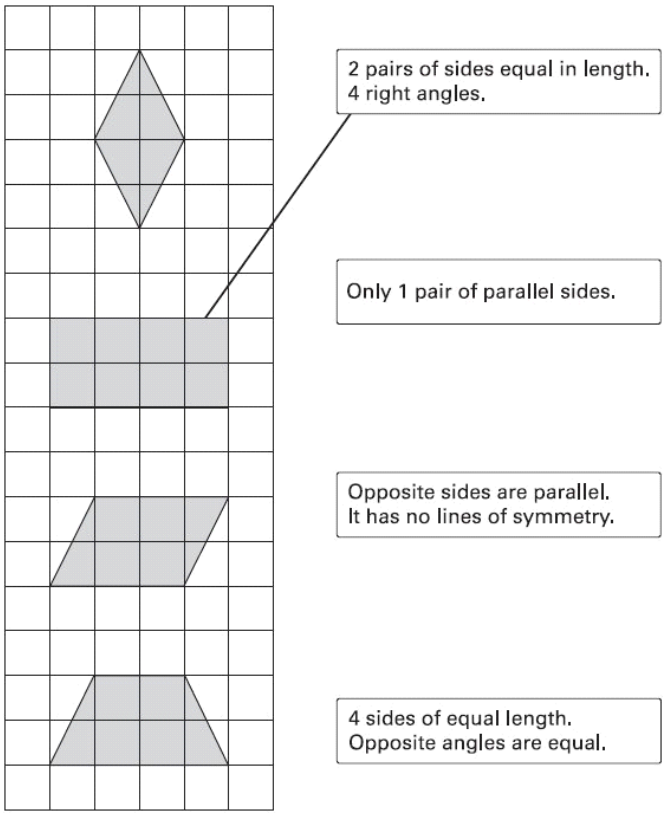
On each one put a tick (✓) if it is a net of a cube.
Put a cross (✗) if it is not.



2 marks

24. Match each quadrilateral to the correct description.

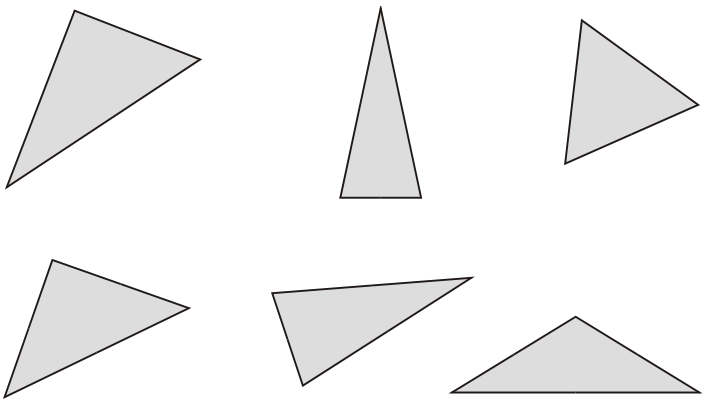
One has been done for you.



1 mark

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

Put a tick (✓) in the equilateral triangle.



1 mark

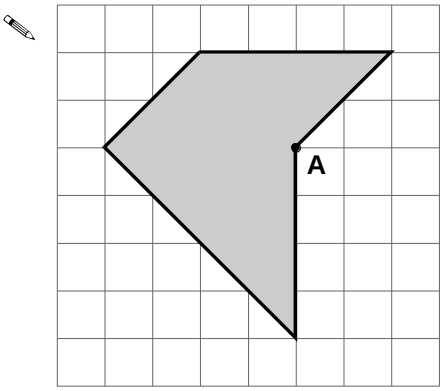
Write **one property** which makes **equilateral** triangles **different** from **all** other triangles.

.....

.....

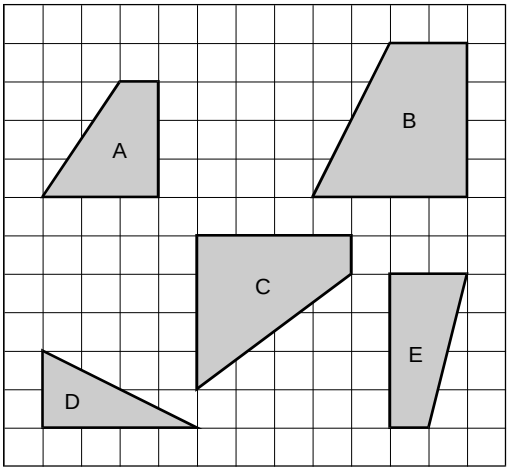
1 mark

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



1 mark

27. Here are five shapes on a square grid.



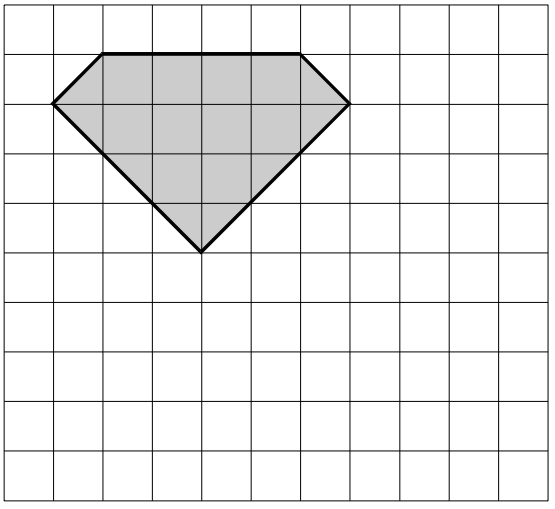
Which **two** shapes fit together to make a **square**?

..... and .....

1 mark

28. On the grid, draw a **rectangle** which has the **same area** as this shaded pentagon.

Use a ruler.

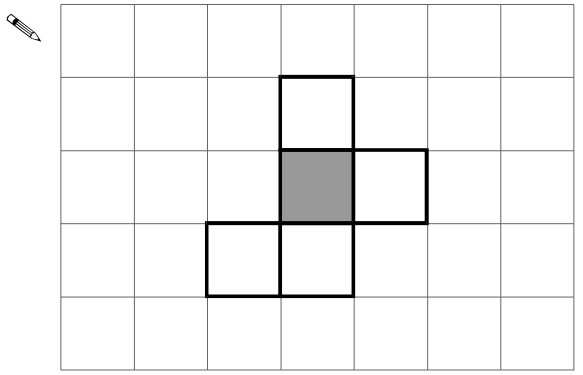


1 mark

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

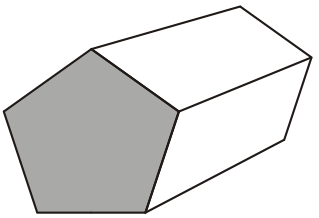
The shaded square shows the bottom of the cube.

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

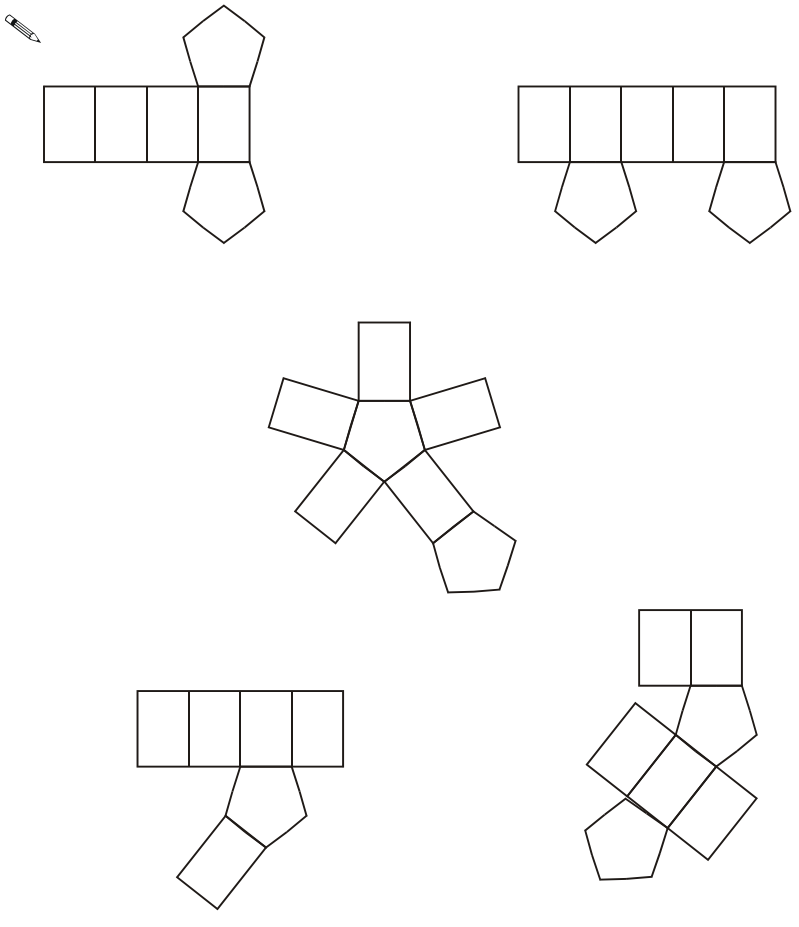


1 mark

30. This is a drawing of a pentagonal prism.

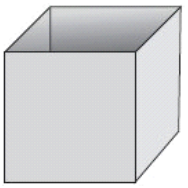


Tick (✓) the one shape that is a net for the pentagonal prism.



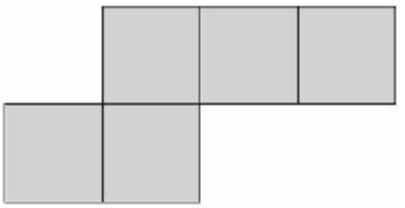
1 mark

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



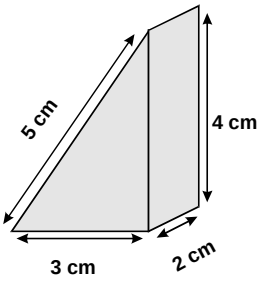
Here is the net from which it is made.

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



1 mark

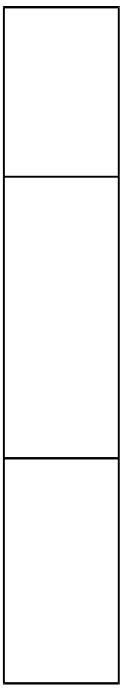
32. Here is a triangular box.



Below is part of the net of the box, but **two** of its faces are missing.

Draw **accurately**, full size, **ONE** of the missing faces on the diagram below.

You can use a ruler and protractor (angle measurer).



2 marks

33. 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. ☐

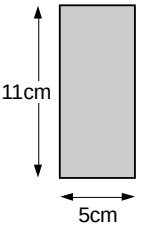
A triangle can have 2 obtuse angles. ☐

A triangle can have 2 parallel sides. ☐

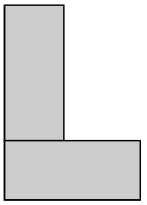
A triangle can have 2 perpendicular sides. ☐

2 marks

34. Liam has two rectangular tiles like this.



He makes this L shape.

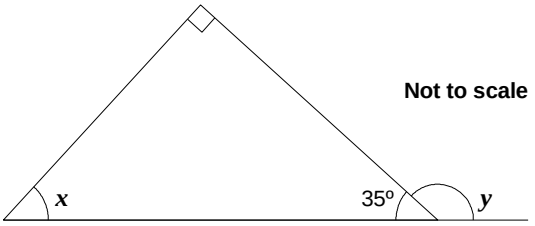


What is the **perimeter** of Liam's L shape?

cm

1 mark

35. Look at this diagram.

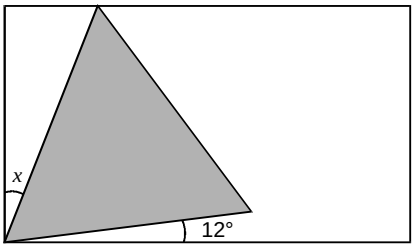


Calculate the size of angle x and angle y.

Do **not** use a protractor (angle measurer).

x = 1 mark y = 1 mark

36. Here is an **equilateral triangle** inside a **rectangle**.



Not to scale

Calculate the value of angle x.

Do **not** use a protractor (angle measurer).

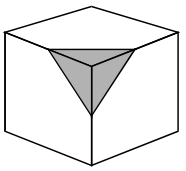
Show your **method.** You may get a mark.

°

2 marks

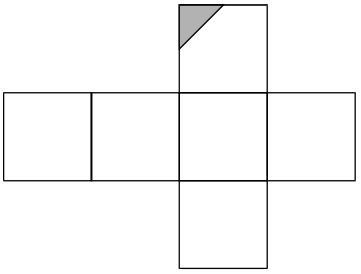
37. How many edges has a triangular prism?

38. A cube has shaded triangles on three of its faces.



Here is the net of the cube.

Draw in the two missing shaded triangles.



1 mark

39. An isosceles triangle has a perimeter of 12cm.

One of its sides is 5cm. What could the length of each of the other two sides be?

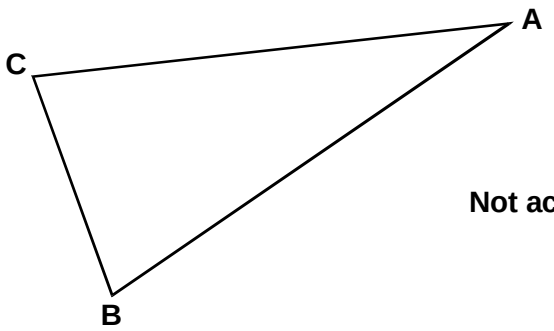
Two different answers are possible. Give **both** answers.

	cm and		**cm**
	cm and		**cm**

2 marks

40. Triangle **ABC** is isosceles and has a perimeter of 20 centimetres.

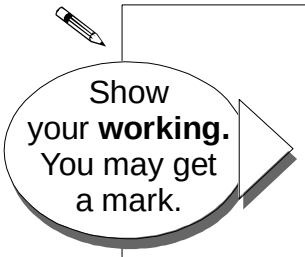
Sides **AB** and **AC** are each twice as long as **BC**.



Not actual size

Calculate the length of the side **BC**.

Do **not** use a ruler.



cm

2 marks