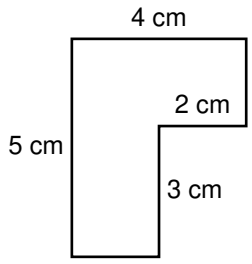
Calculating Area & Perimeter

Name: _____ **Date:** _____

Calculate the area and perimeter of each shape.

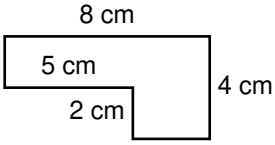
(1)



Perimeter: _____

Area: _____

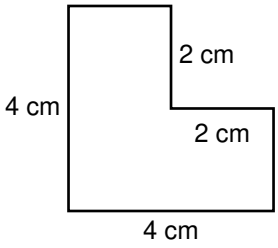
(2)



Perimeter: _____

Area: _____

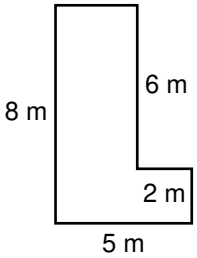
(3)



Perimeter: _____

Area: _____

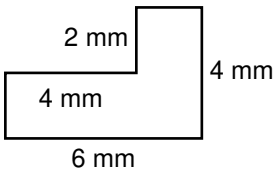
(4)



Perimeter: _____

Area: _____

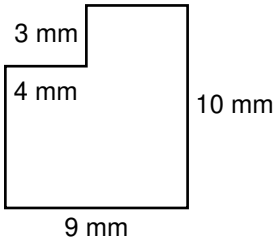
(5)



Perimeter: _____

Area: _____

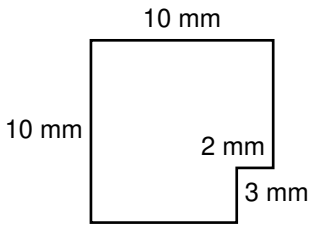
(6)



Perimeter: _____

Area: _____

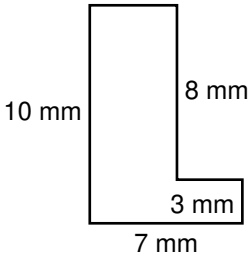
(7)



Perimeter: _____

Area: _____

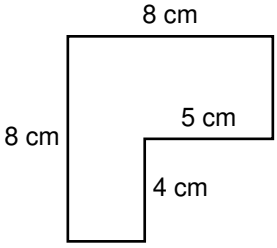
(8)



Perimeter: _____

Area: _____

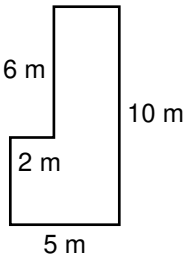
(9)



Perimeter: _____

Area: _____

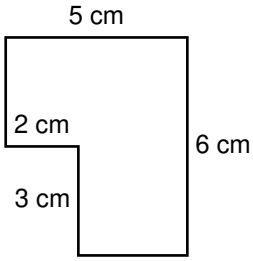
(10)



Perimeter: _____

Area: _____

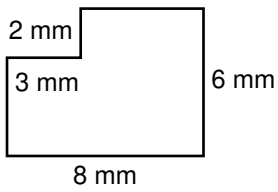
(11)



Perimeter: _____

Area: _____

(12)



Perimeter: _____

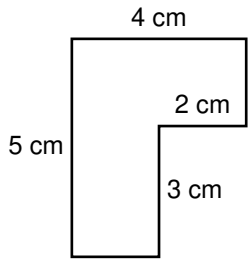
Area: _____

Calculating Area & Perimeter

ANSWER KEY

Calculate the area and perimeter of each shape.

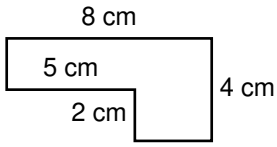
(1)



Perimeter: 18 cm

Area: 14 cm^2

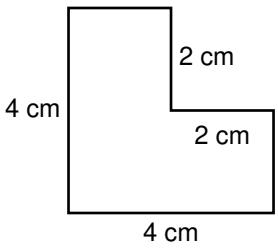
(2)



Perimeter: 24 cm

Area: 22 cm^2

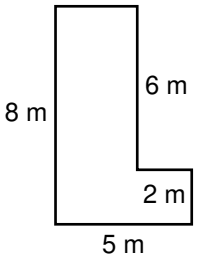
(3)



Perimeter: 16 cm

Area: 12 cm^2

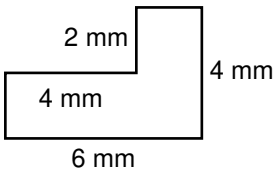
(4)



Perimeter: 26 m

Area: 28 m^2

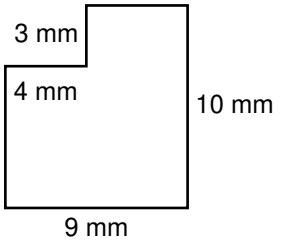
(5)



Perimeter: 20 mm

Area: 16 mm^2

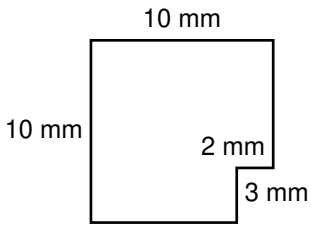
(6)



Perimeter: 38 mm

Area: 78 mm^2

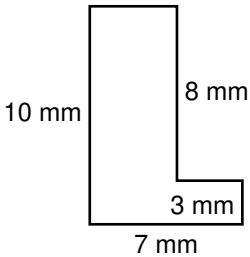
(7)



Perimeter: 40 mm

Area: 94 mm^2

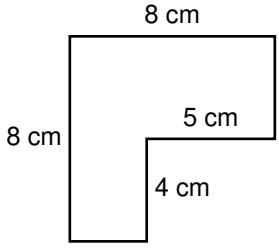
(8)



Perimeter: 34 mm

Area: 46 mm^2

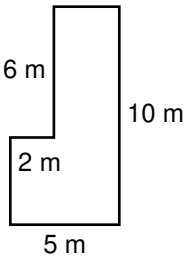
(9)



Perimeter: 32 cm

Area: 44 cm^2

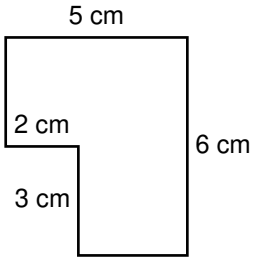
(10)



Perimeter: 30 m

Area: 38 m^2

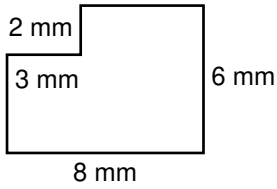
(11)



Perimeter: 22 cm

Area: 24 cm^2

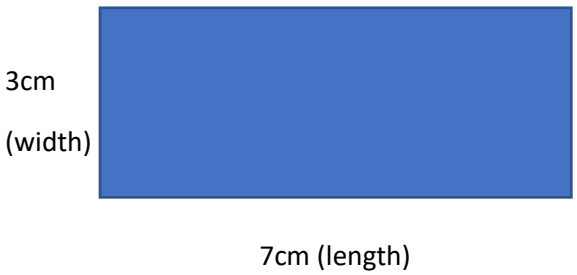
(12)



Perimeter: 28 mm

Area: 42 mm^2

Rectangles



Area = length x width

= 7cm x 3cm = 21cm^2

Perimeter = length + length + width + width

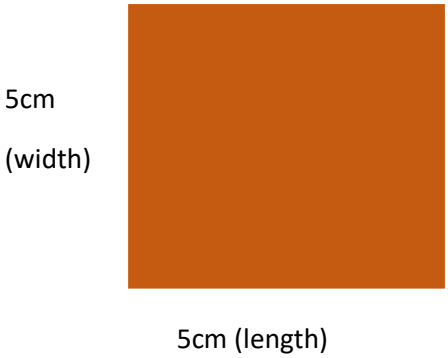
= (length + width) x 2

= (7cm + 3cm) x 2

= 10cm x 2 = 20cm

Squares

Squares follow the same rule as rectangles, but all the measurements are the same!



Area = length x width

= 5cm x 5cm = 25cm^2

As the length and width are the same in a square, just square one of the sides.

Perimeter = length + length + width + width

= (length + width) x 2

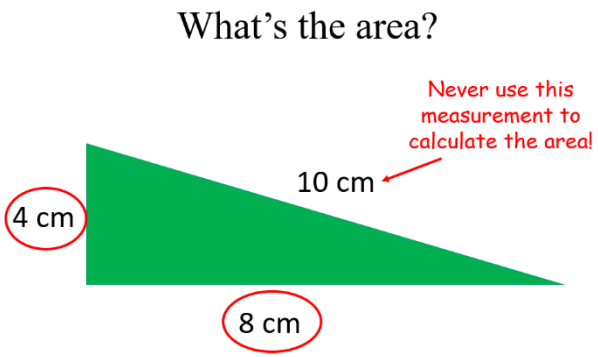
= (5cm + 5cm) x 2

= 10cm x 2 = 20cm

As the length and width are the same in a square and there are 4 equal sides, simply multiply ones of the lengths by 4. 5cm x 4 = 20cm

Right-angled triangles

A triangle is half of a rectangle.



To calculate the area, find the length and the width of the triangle, multiply them together and then half them.

Area = length x width ÷ 2

= 8cm x 4cm ÷ 2 = 32cm^2 ÷ 2 = 16cm^2

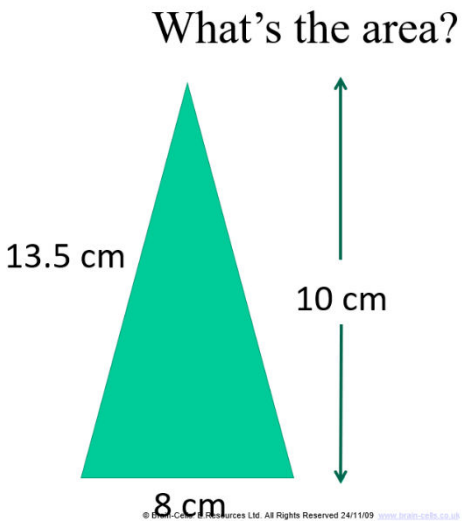
To calculate the perimeter, add up all of the lengths of the sides.

Perimeter = length + width + hypotenuse

= 8cm + 4cm + 10cm

= 22cm

Triangles (that don't have a right-angle)



Be careful to use the correct measurements:

length = 8cm height = 10cm hypotenuse = 13.5cm

To calculate the area, it's the same as before! Multiply the length and the height of the triangle together.

Area = length x height ÷ 2

= 8cm x 10cm ÷ 2 = $80cm^2 \div 2$ = $40cm^2$

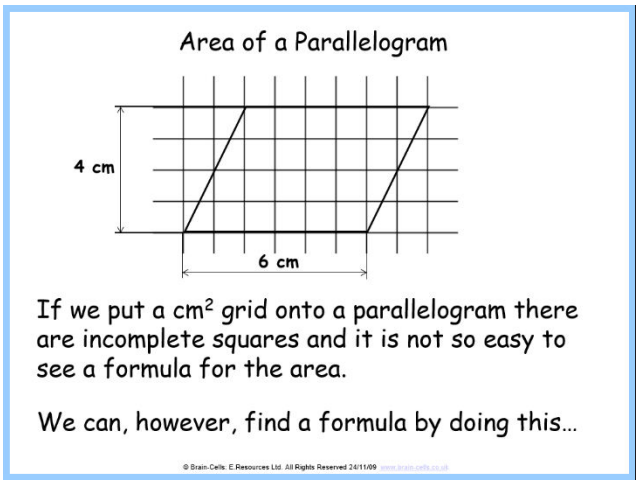
To calculate the perimeter, add up all of the lengths of the sides.

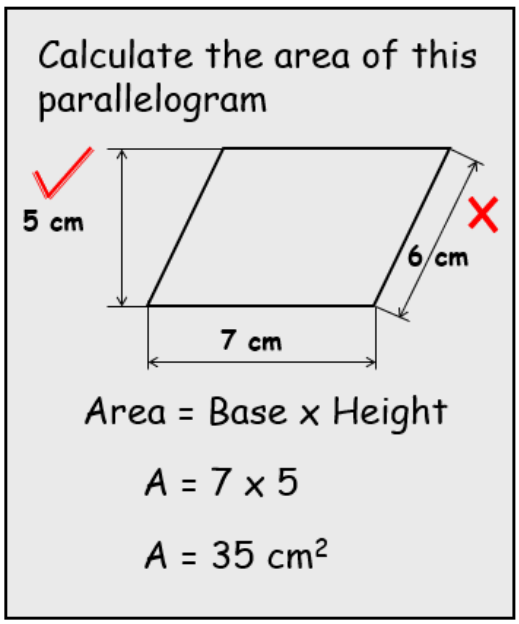
Perimeter = length + hypotenuse + hypotenuse

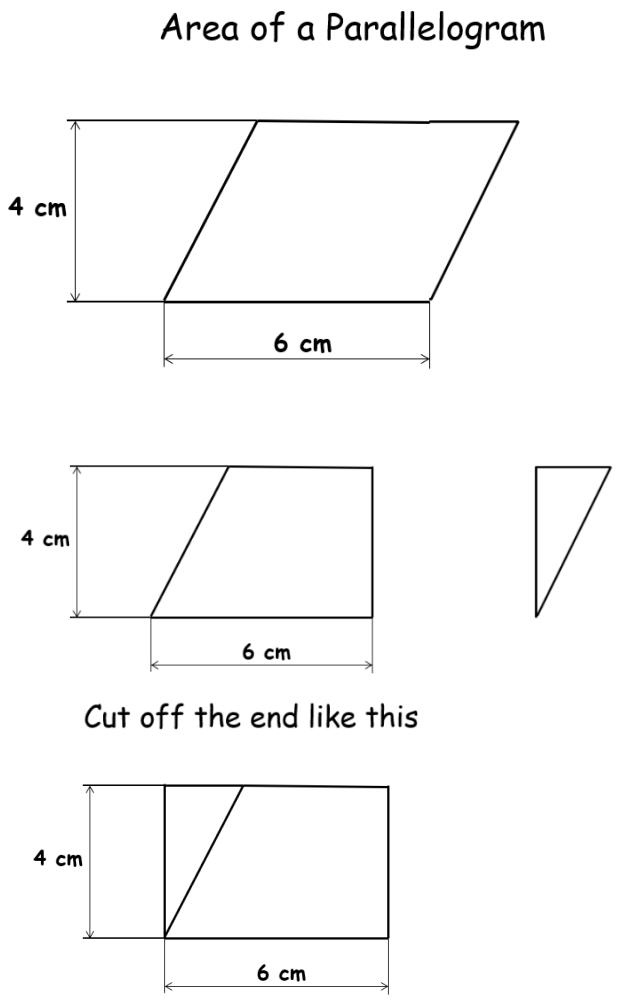
= 8cm + 13.5cm + 13.5cm

= 35cm

Parallelogram





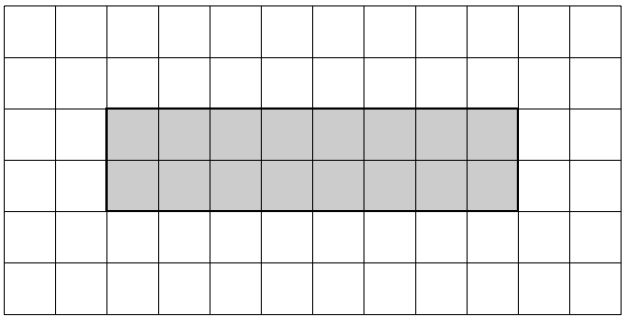


To calculate the area, we simply multiply the base (width) by the height (like the rectangle).

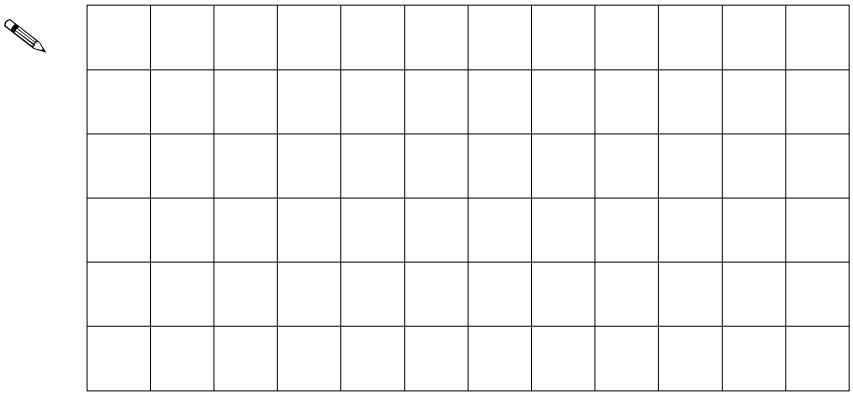
Area = 6cm x 4cm = $24cm^2$

= $22cm^2$

1. The diagram shows a rectangle, drawn on a square grid.

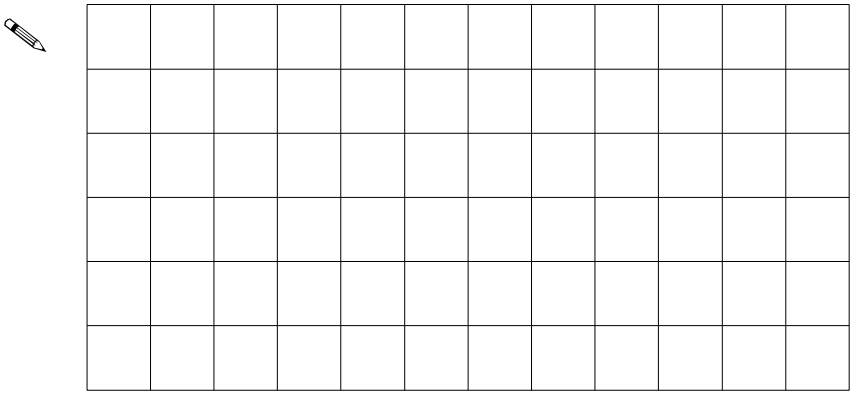


(a) Draw a **square** that has the **same area** as the rectangle.



1 mark

(b) Draw a **square** that has the **same perimeter** as the rectangle.

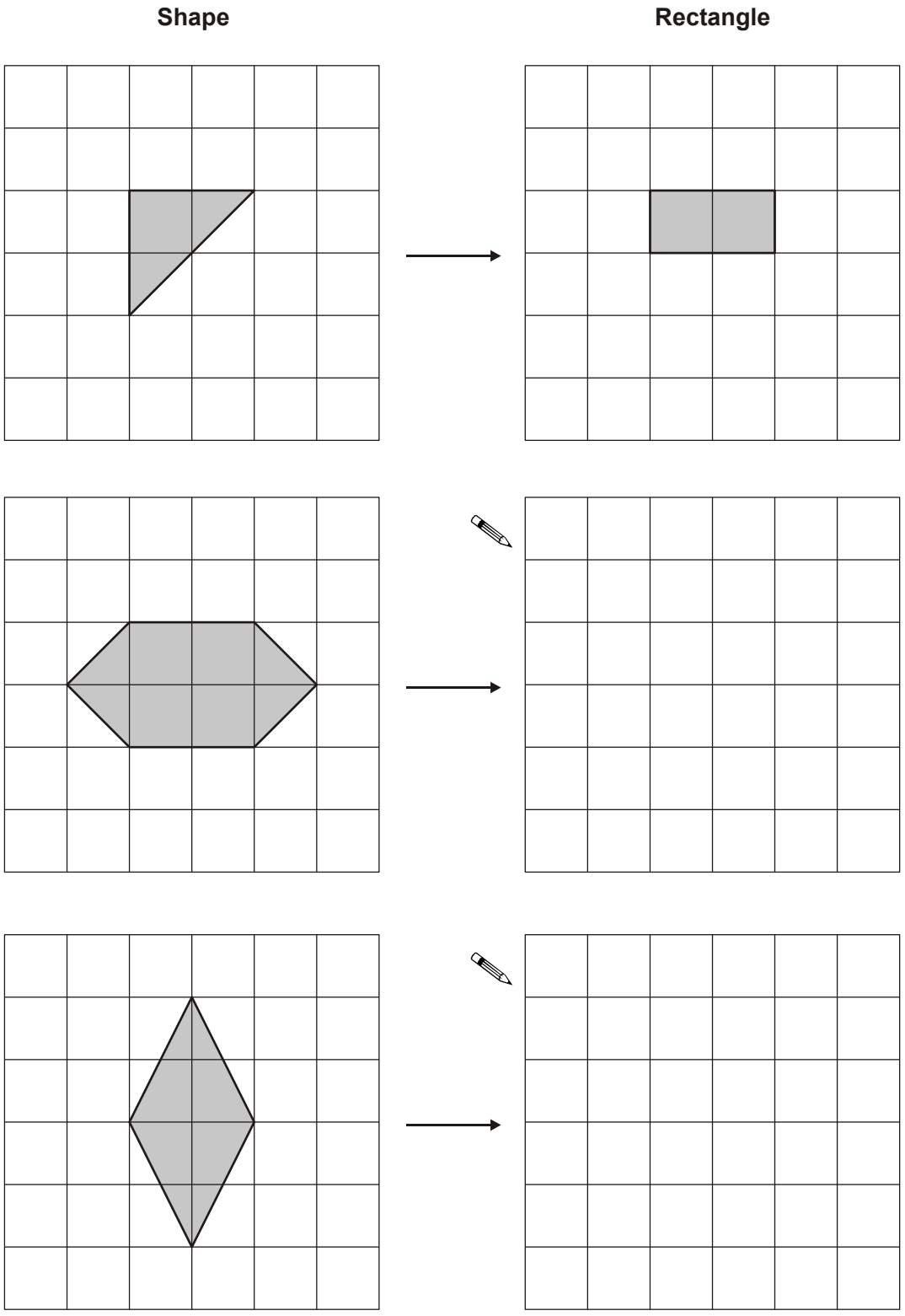


1 mark

2. The grids in this question are centimetre square grids.

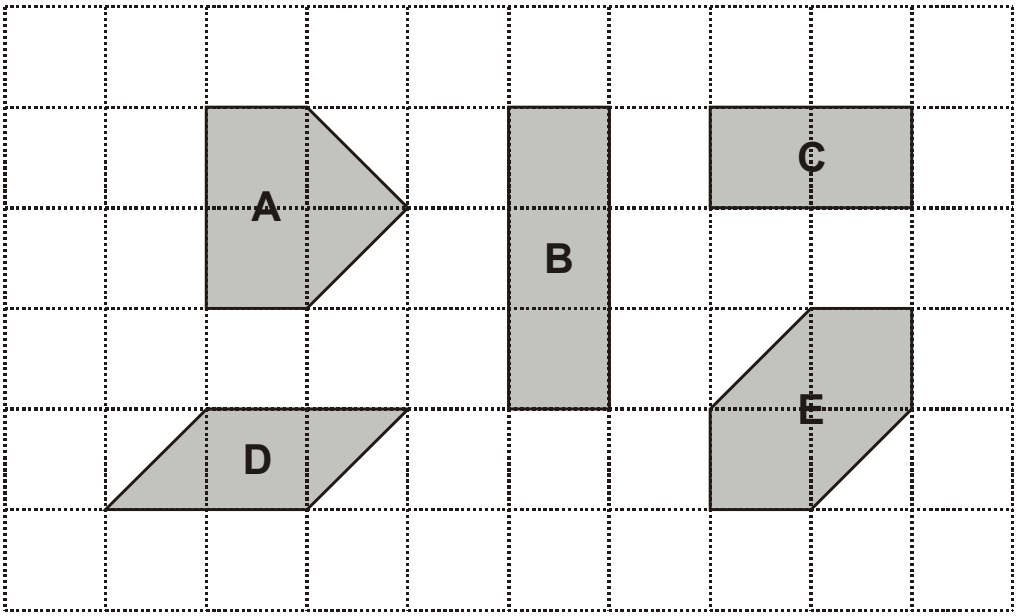
For each shape on the left, draw a **rectangle** that has the **same area**.

The first one is done for you.



2 marks

3. The diagram shows some shapes on a 10 by 6 square grid.



(a) Which **two** shapes have the **same area** as shape **A**?

..... 1 mark

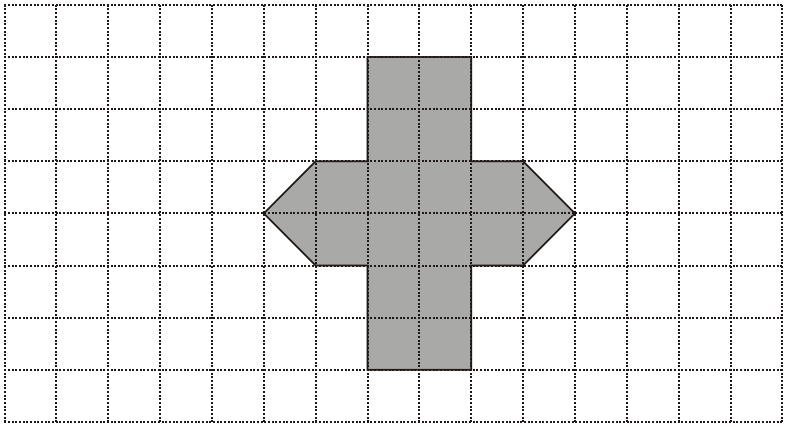
(b) Which **two** shapes have the **same perimeter** as shape **A**?

..... 1 mark

(c) How many of shape **C** would you need to cover a 10 by 6 square grid?

..... 1 mark

4. Here is a shaded shape on a centimetre square grid.

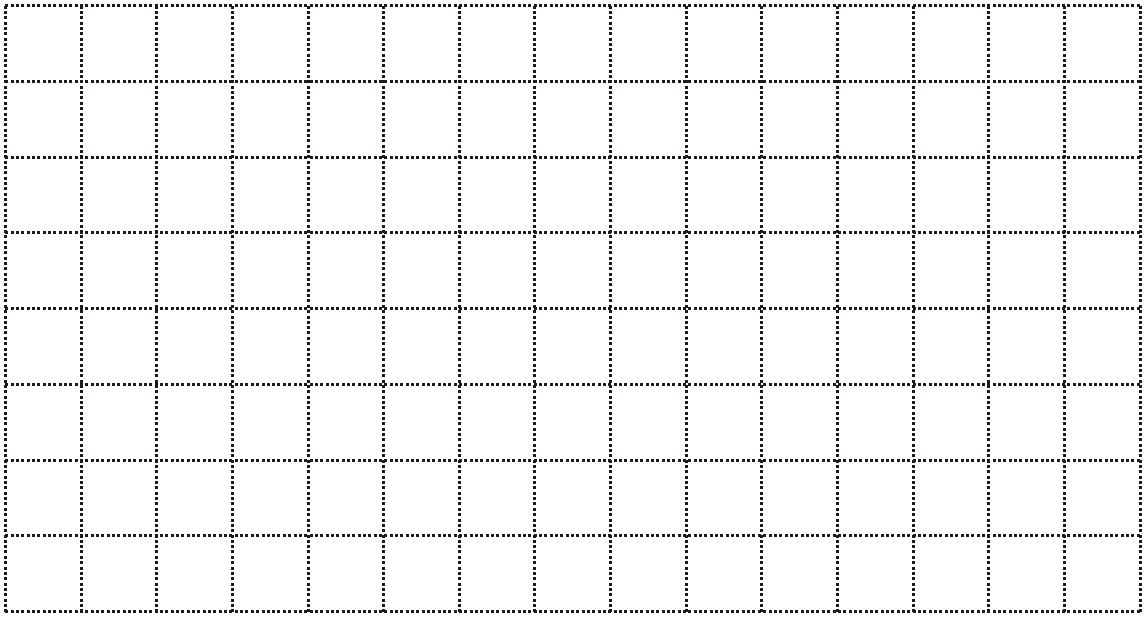


(a) What is the area of the shaded shape?

..... **cm^2**

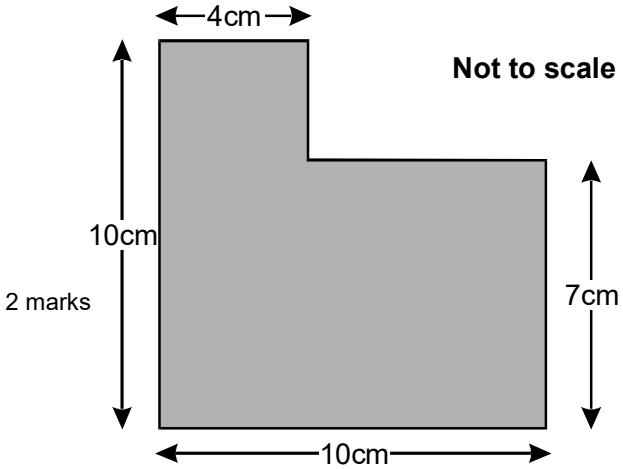
1 mark

(b) Now draw a rectangle that has the same area as the shaded shape.



1 mark

6. What is the **area** of this shape?



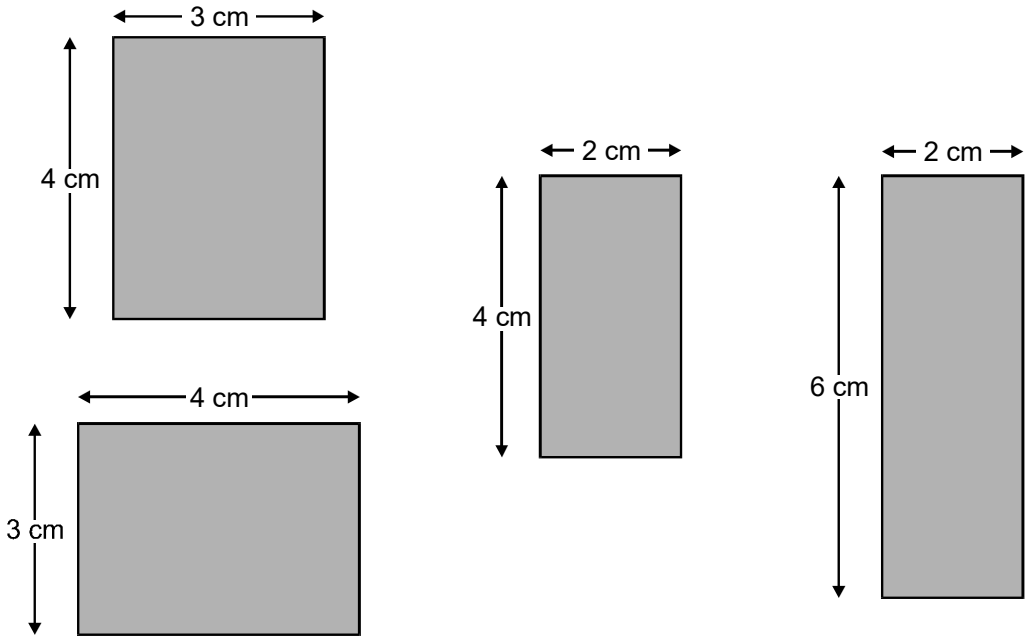
Not to scale

2 marks

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

cm²

7. (a) Tick (✓) any rectangles below that have an area of $12cm^2$



1 mark

(b) A **square** has an area of **100**cm^2

What is its **perimeter**?

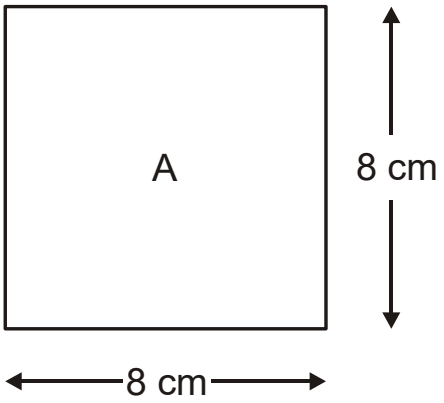
Show your working.

..... **cm**

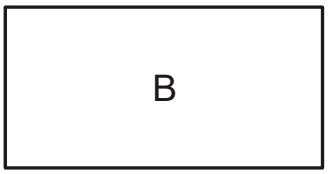
2 marks

8. (a) I have a square piece of paper.

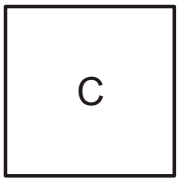
The diagram shows information about this square labelled A.



I fold square A **in half** to make rectangle B.



Then I fold rectangle B **in half** to make square C.

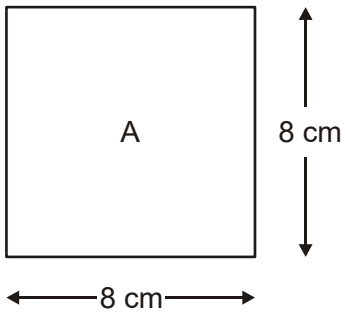


Complete the table below to show the area and perimeter of each shape.

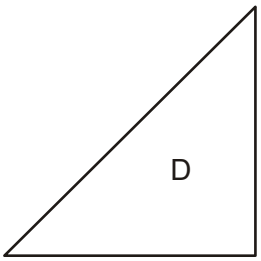
	Area	Perimeter
Square A	cm^2	cm
Rectangle B	cm^2	cm
Square C	cm^2	cm

3 marks

(b) I start again with square A.



Then I fold it **in half** to make triangle D.



What is the **area** of triangle D?

..... cm^2

1 mark

(c) One of the statements below is true for the perimeter of triangle D.

Tick (✓) the correct one.

The perimeter is less than 24 cm. ☐

The perimeter is 24 cm. ☐

The perimeter is greater than 24 cm. ☐

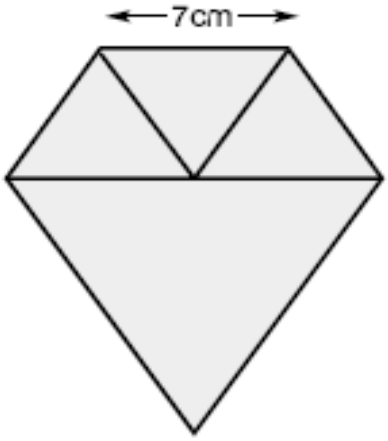
Explain your answer.

1 mark

20 Lauren has **three small equilateral triangles** and **one large equilateral triangle.**

The small triangles have sides of **7 centimetres.**

Lauren makes this shape.



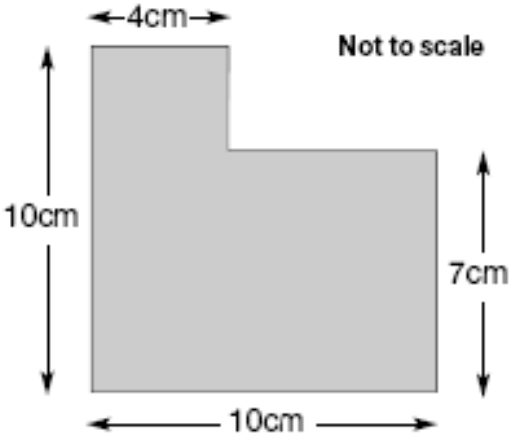
Not actual size

Calculate the **perimeter** of the shape.

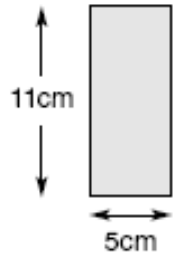
Do **not** use a ruler.

cm

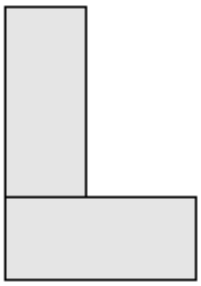
22 What is the **area** of this shape?



19 Liam has two rectangular tiles like this.



He makes this L shape.



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

cm

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

Use a ruler.