**1** This is a centimetre grid.
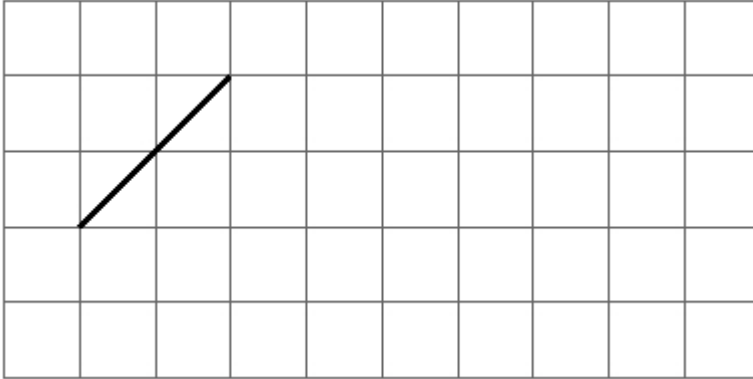
Draw **3 more lines** to make a **parallelogram** with an **area** of **10 cm²**.
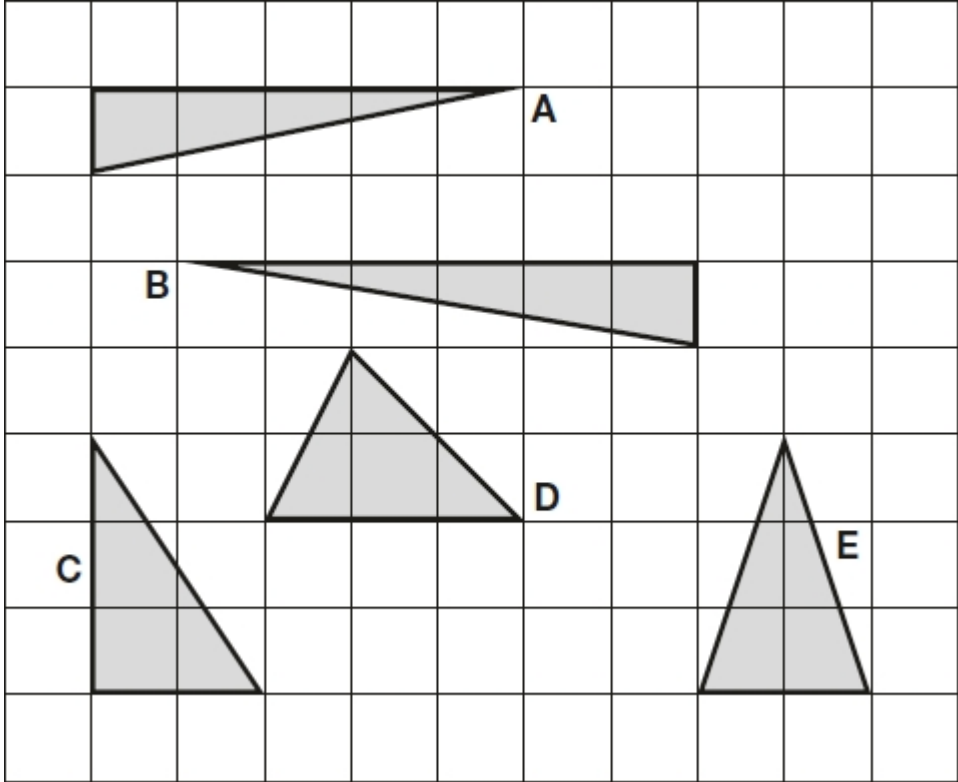
Use a ruler.



1 mark

**2** Here are five triangles on a square grid.
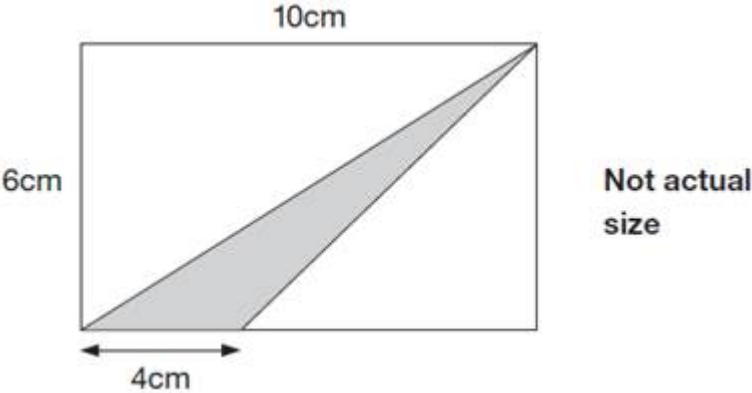


Four of the triangles have the same area.

Which triangle has a **different** area?

_____

1 mark

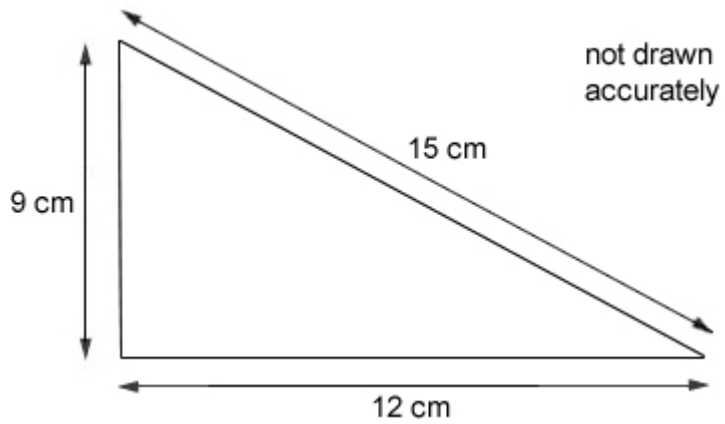**3** The diagram shows a shaded triangle inside a rectangle.



10cm

6cm

Not actual size

4cm

What is the area of the shaded triangle?

Show your method

cm²

2 marks

**4** Calculate the area of this triangle.

not drawn accurately

15 cm

9 cm

12 cm
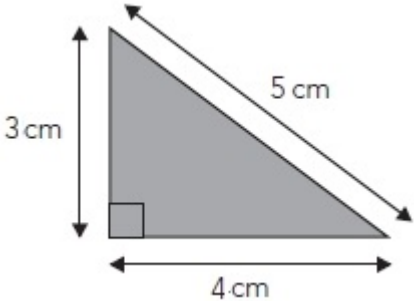
| | |
|---|---|
| | cm$^2$ |

1 mark

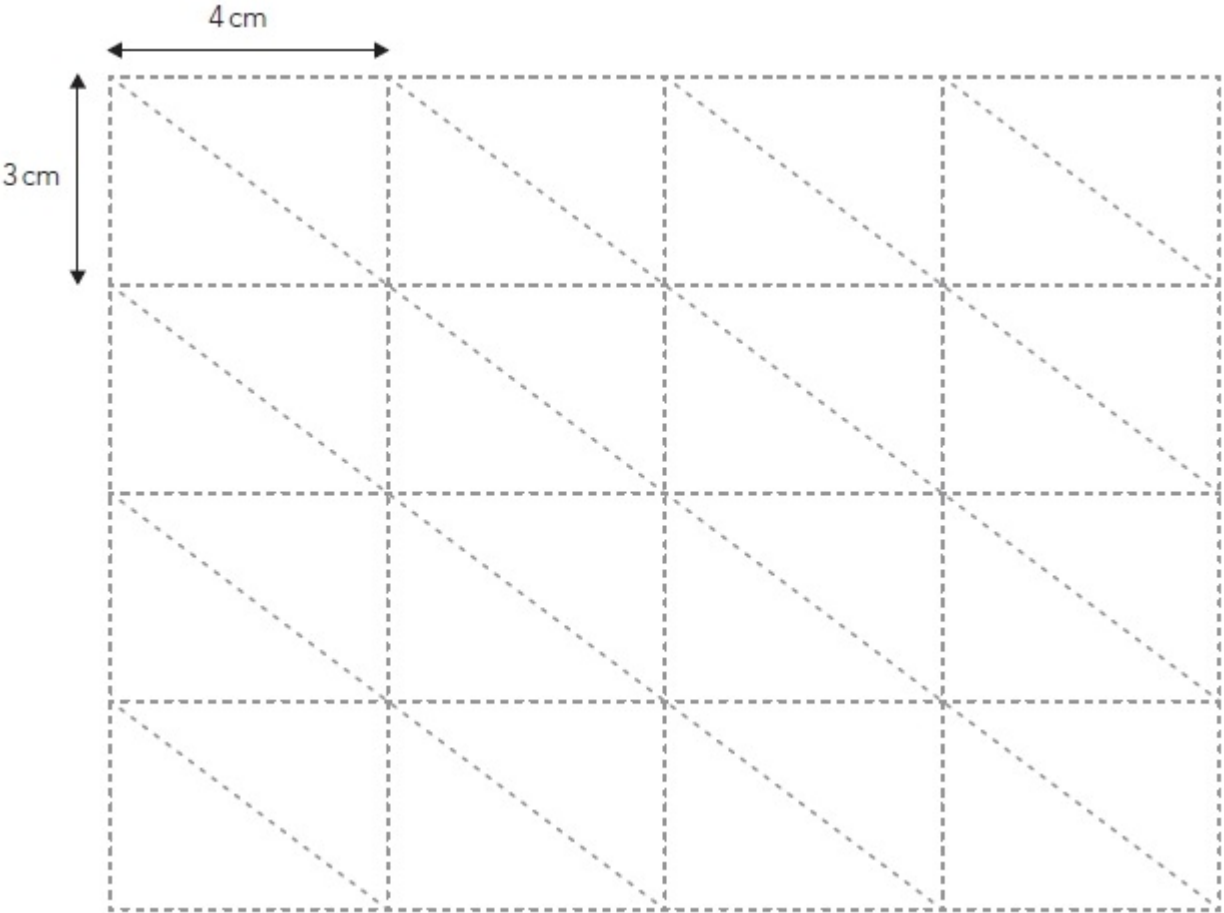**5** Draw two more lines to complete the triangle with an **area** of 10 cm$^2$
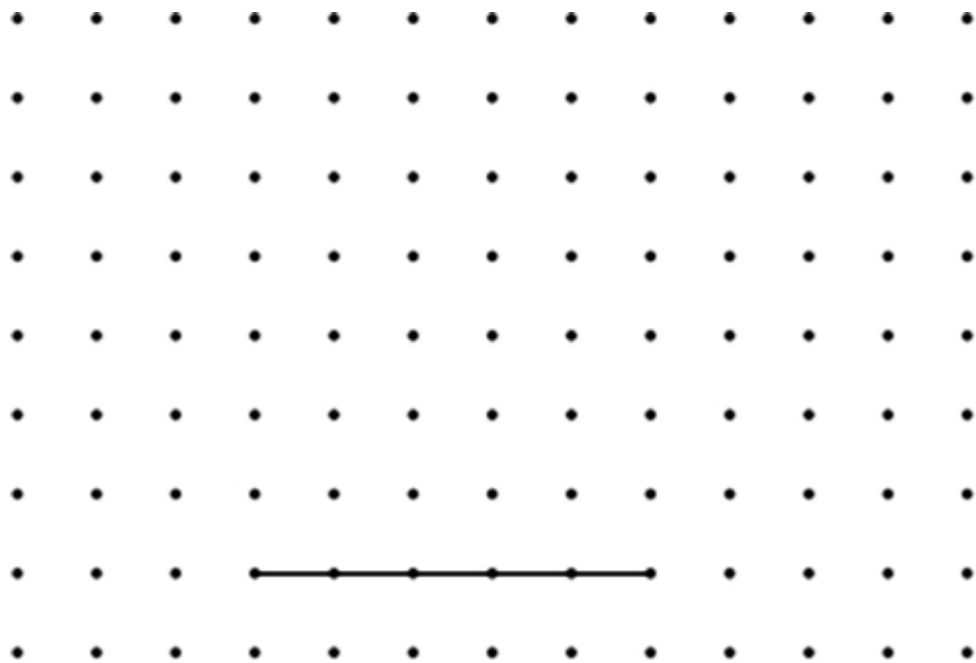
1 mark

**6**

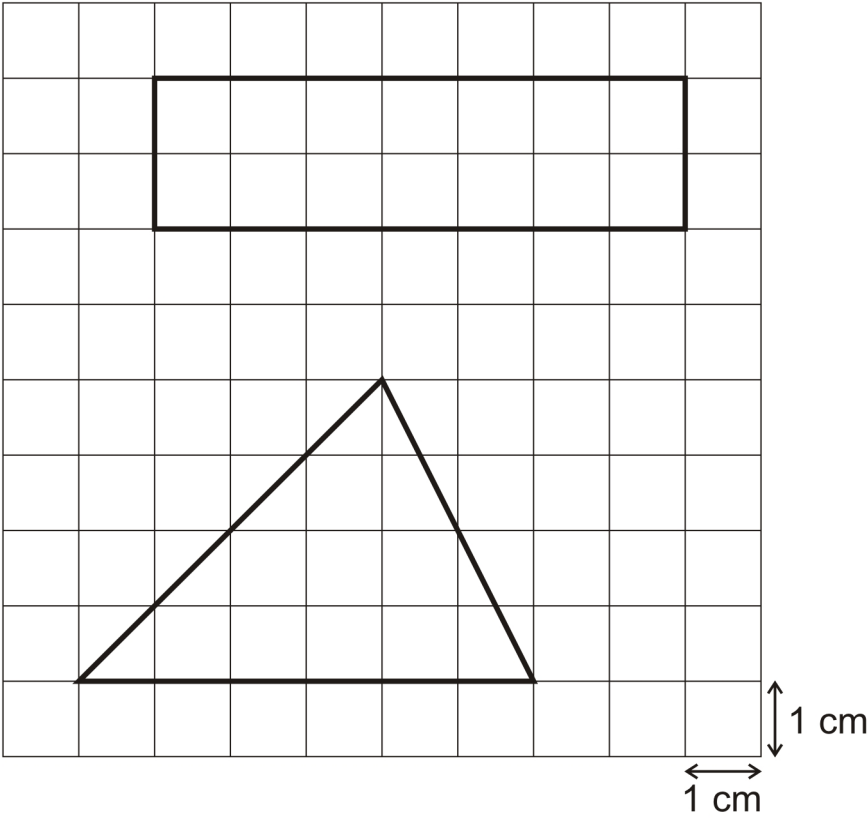The grid below is made of right-angled triangles like this:



Shade triangles on the grid to make a **quadrilateral**.

Your quadrilateral must have an area of **24 cm²** and a perimeter of **26 cm**.



2 marks

**7**
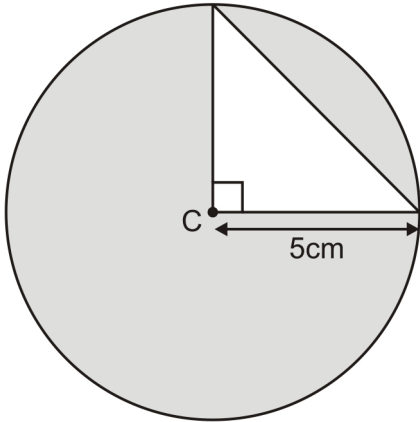


Work out the area of each shape.

(a)   Rectangle

| | cm² |
|---|---|

(b)   Triangle

| | cm² |
|---|---|

**8**

The diagram shows a **right-angled triangle** inside a **circle**.

The circle has a radius of **5 centimetres**.



Calculate the **area** of the **triangle**.

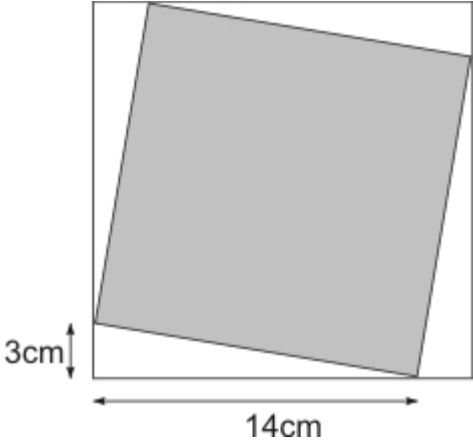| | |
|---|---|
| | cm² |

1 mark

Calculate the area of the **shaded part** of the diagram.

Show your method

| | |
|---|---|
| | cm² |

2 mark

**9** The diagram shows a shaded square inside a larger square.



3cm

14cm

Calculate the area of the **larger square**.

| | |
|---|---|
| | cm² |

1 mark

Calculate the area of the **shaded square**.

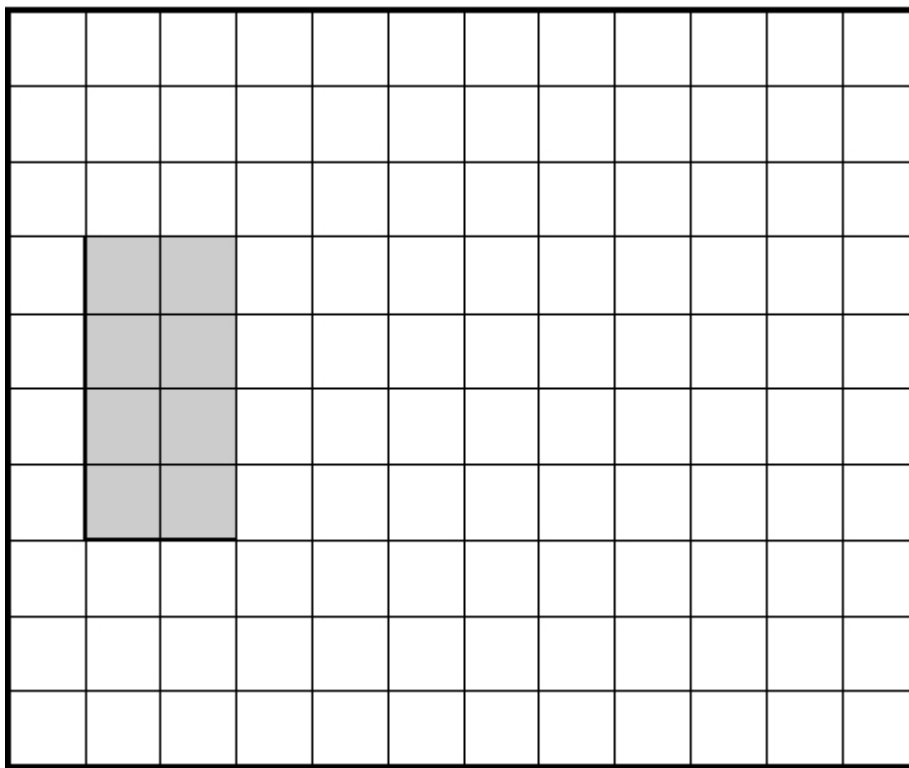Show your method

| | |
|---|---|
| | cm |

2 mark

**10** On the grid draw a **triangle** with the **same area** as the shaded rectangle.
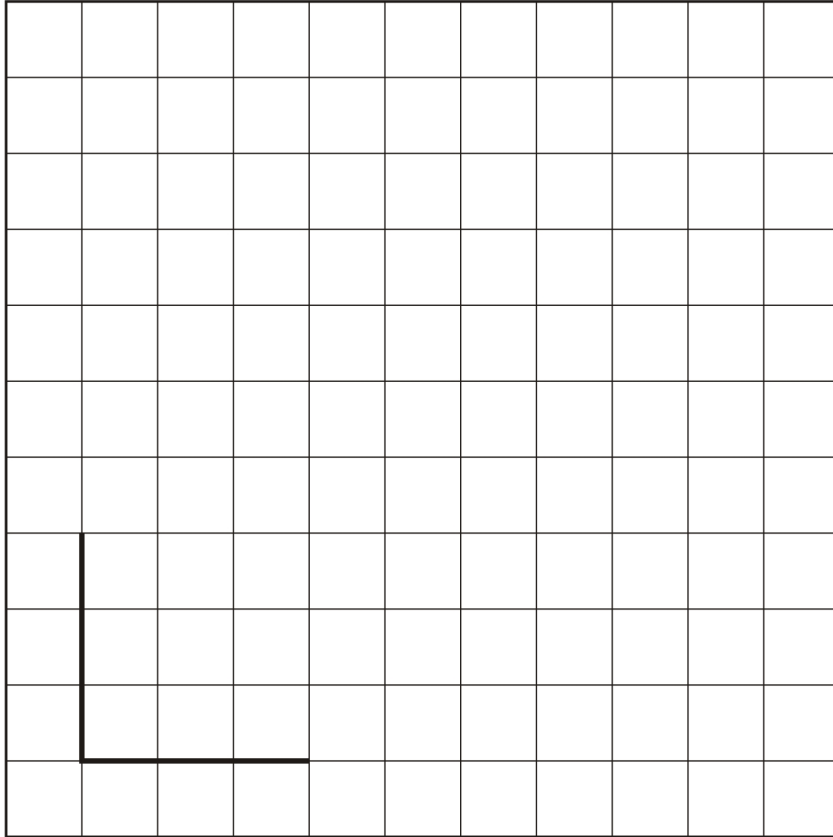
Use a ruler.



1 mark

**11**

Here is a centimetre grid.

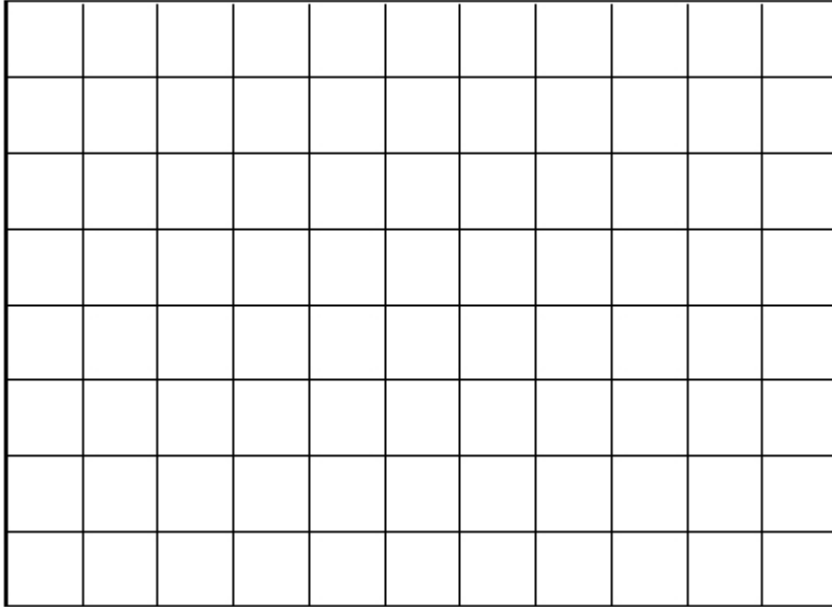Draw **two** more lines to make a **quadrilateral** with an area of **18 cm²**.

Use a ruler.



1 mark

**12** This is a centimetre grid.

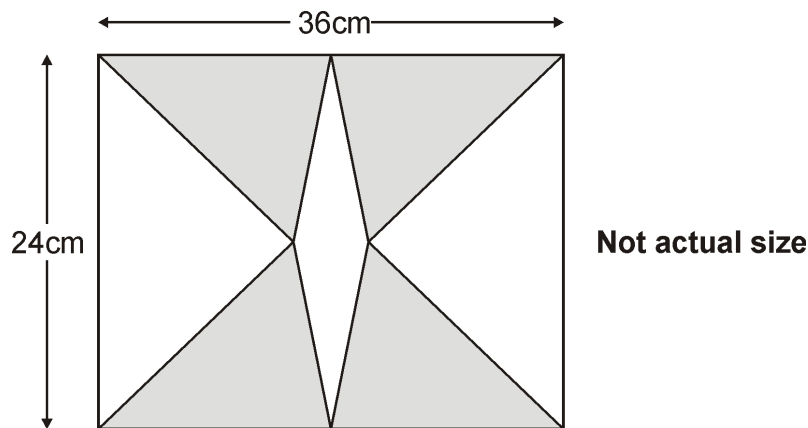On the grid draw a **triangle** which has an **area of 7.5 cm²** and which has **an obtuse angle**.

Use a ruler.

2 mark

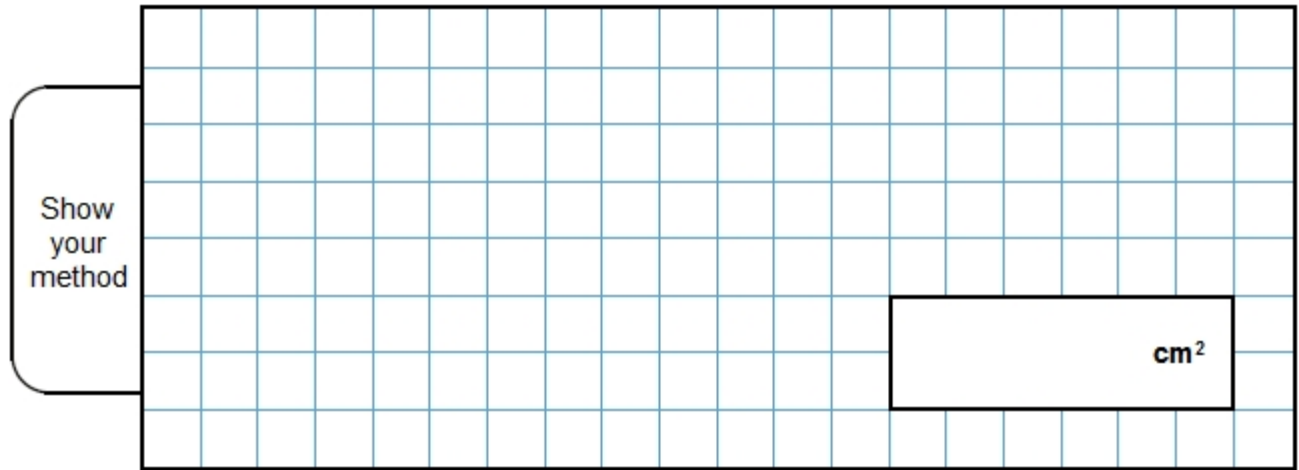**13** The diagram shows **4 identical shaded triangles** in a rectangle.

36cm

24cm

**Not actual size**

The rectangle measures **36 centimetres** by **24 centimetres**.

Calculate the **area** of **one shaded triangle**.
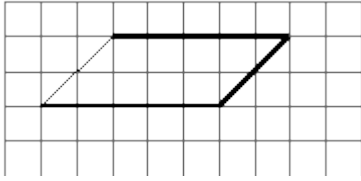
Show your method

cm²

2 mark

# Mark schemes

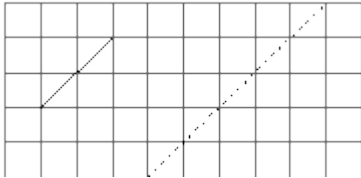**1**   Diagram completed as shown below:



> *Accept slight inaccuracies in drawing provided the intention is clear.*
>
> *The shape need not be shaded.*

**OR**

any parallelogram using the given line,
and part of the broken line shown below.



**[1]**

**2**   A

> *Accept alternative unambiguous positive indications of the correct triangle, e.g. $2\frac{1}{2}$ or 2.5.*

**[1]**

**3**   12

2

*or*

Shows or implies a complete correct method, eg:

- $4 \times 6 \div 2 = 13$ *(error)*

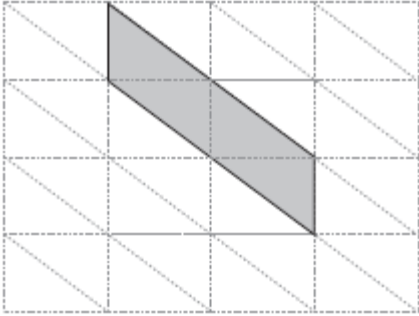- $60 - (10 \times 6 \div 2) - (6 \times 6 \div 2)$

- $60 - 48$

1

**[2]**

**4**   54 cm$^2$

**[1]**

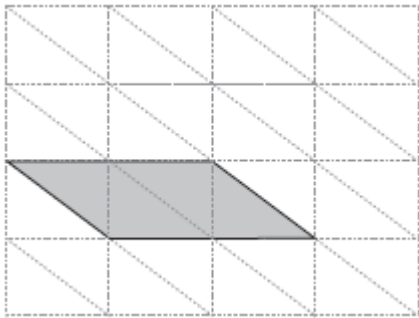**5** Any triangle with a perpendicular height of 4 cm.

[1]

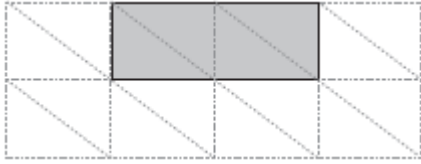**6** Shows a correct quadrilateral, eg
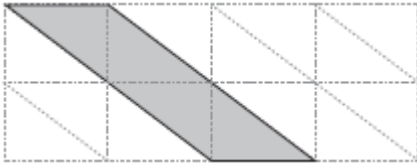
- 

**OR**

- 

2
U1

*or*

Shows a quadrilateral with an area of 24 cm² but not a perimeter of 26 cm, eg

- 

**OR**

- 

1

*! Shading omitted*
*Accept provided the quadrilateral drawn is unambiguous*
*! Lines not ruled or accurate*
*Accept slight inaccuracies in drawing provided the pupil's intention*
*is clear*

[2]

**7**    (a)    Rectangle – 14

1

(b)    Triangle – 12

1

[2]

**8**    (a)    12.5 **OR** 12½

1

(b)    Award **TWO** marks for the correct answer in the range of 66 to 66.1
inclusive **OR** an answer based upon values obtained in **13a**.

   If the answer is incorrect award **ONE** mark for evidence of an
appropriate method, eg

-   (3.14 × 5 × 5) −12.5

      *The calculation need not be completed for the award of the mark.*

Up to 2

[3]

**9**    (a)    289

1

(b)    Award **TWO** marks for a correct answer of 205 **OR** a number calculated from the answer
given in *(a)*, ie
(answer given in *(a)*) – 66

If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, eg

196 – (4 × 16.5)

**OR**

(answer given in *(a)*) – (4 × 16.5)
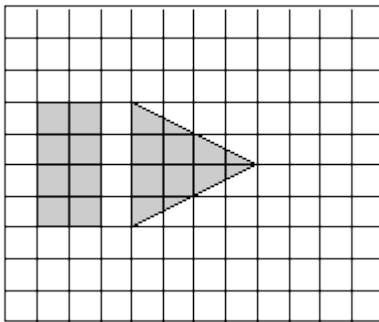
**OR**

$14^2 + 3^2 = 196 + 9$ (Pythagoras)

*Calculation need not be completed for the award of the mark.*

Up to 2

**[3]**

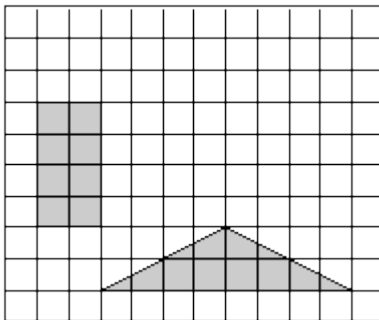**10** Any triangle with an area of 8 cm$^2$, eg



*Drawings must be accurate to within 2 mm of appropriate grid intersections.*
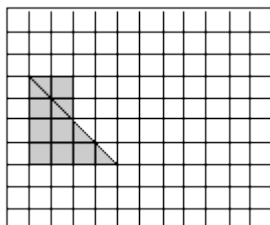
*The triangle need not be shaded and need not have vertices at grid junctions.*

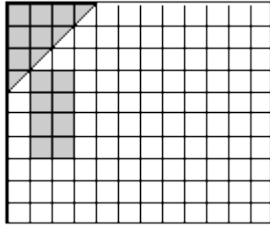*Do not penalise drawings done without a ruler, provided the intention is clear.*

**OR**



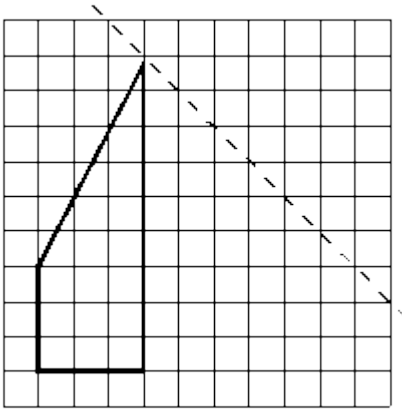*Accept drawings that overlap the given rectangle or use the edge of the grid, eg*
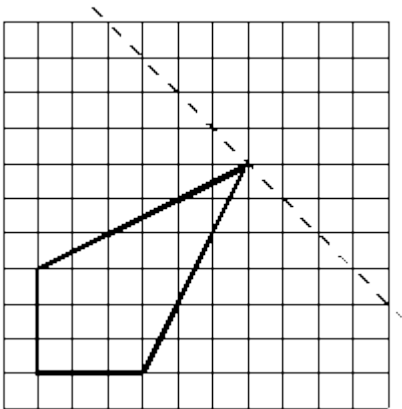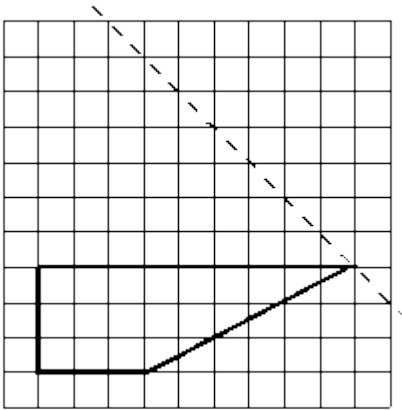
*OR*



**[1]**

**11** Two more lines drawn which intersect at a fourth vertex located anywhere on the dotted line shown on the diagrams below, eg
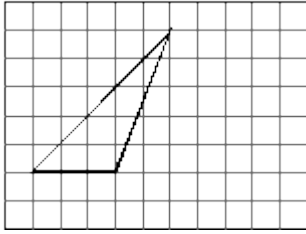


**OR**



**OR**



*Accept slight inaccuracies in drawing provided the intention is clear.*

**[1]**

**12** Award **TWO** marks for any obtuse-angled triangle with an area of 7.5 cm$^2$, eg



If the answer is incorrect, award **ONE** mark for any triangle with an area of 7.5 cm$^2$ (irrespective of angles)

> *Accept any obtuse-angled triangle with appropriate base and height each correct to within 2 mm*
>
> *The triangle need not have vertices on the grid intersections.*
>
> *Accept a triangle not drawn with a ruler, provided the vertices are correctly placed.*

Up to 2

**[2]**

**13** Award **TWO** marks for the correct answer of 108 cm$^2$

If the answer is incorrect award **ONE** mark for evidence of an appropriate method, eg

$36 \div 2 = 18$

$24 \div 2 = 12$

area = ½ × 12 × 18

> *Calculation need not be completed for the award of the mark.*
>
> **No mark** *is awarded for the result of calculating 12 × 18 only.*

Up to 2

**[2]**