

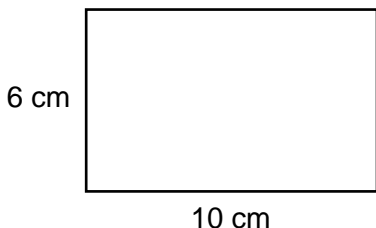


SCAN ME

Area of Shapes

← REVISE THIS TOPIC

1



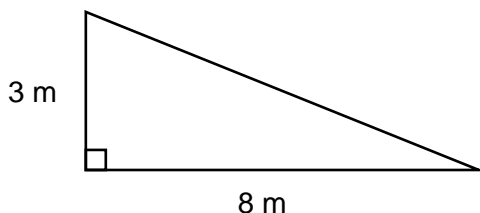
Not drawn accurately

Work out the area of the rectangle giving the units of your answer. [2 marks]

6×10

Answer 60 cm^2

2



Not drawn accurately

Work out the area of the triangle giving the units of your answer. [3 marks]

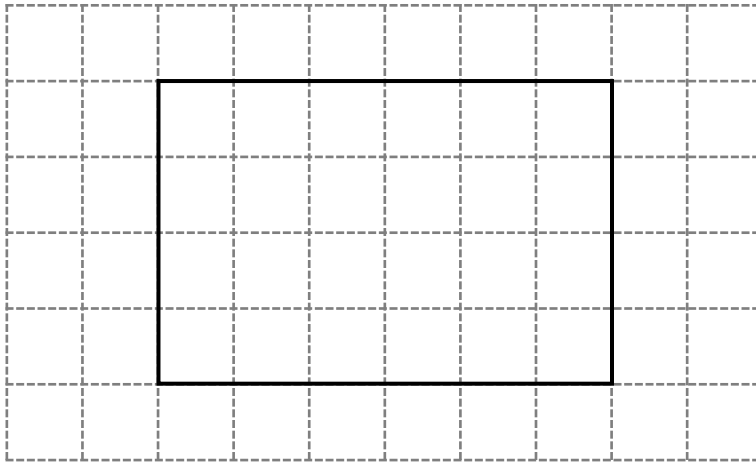
$\frac{1}{2} \times 8 \times 3$

Answer 12 m^2





3 (a) A rectangle is drawn on a centimetre grid.

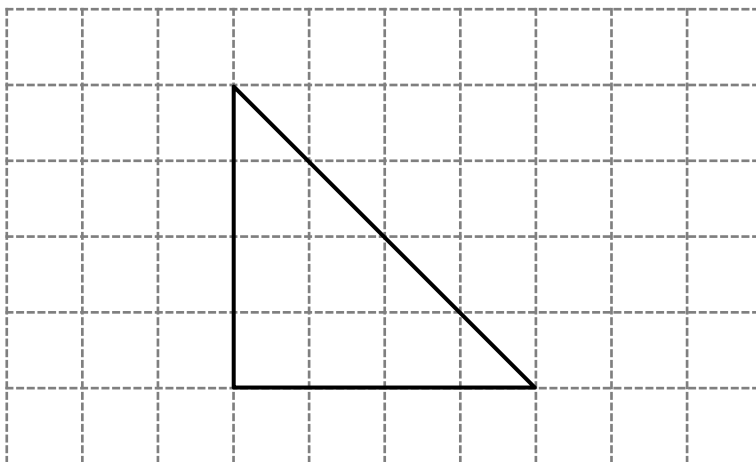


Work out the area of the rectangle.

[1 mark]

Answer 24 cm²

3 (b) A triangle is drawn on a centimetre grid.



Work out the area of the triangle.

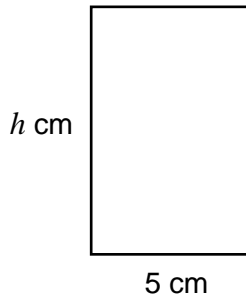
[1 mark]

Answer 8 cm²





4 The rectangle has a base of 5 cm and a height of h cm.



Not drawn accurately

The area of the rectangle is 40 cm^2

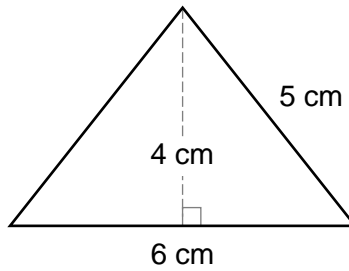
Work out the value of h .

[1 mark]

$$40 \div 5$$

$$h = 8 \text{ cm}$$

5



Not drawn accurately

Work out the area of the triangle.

[2 marks]

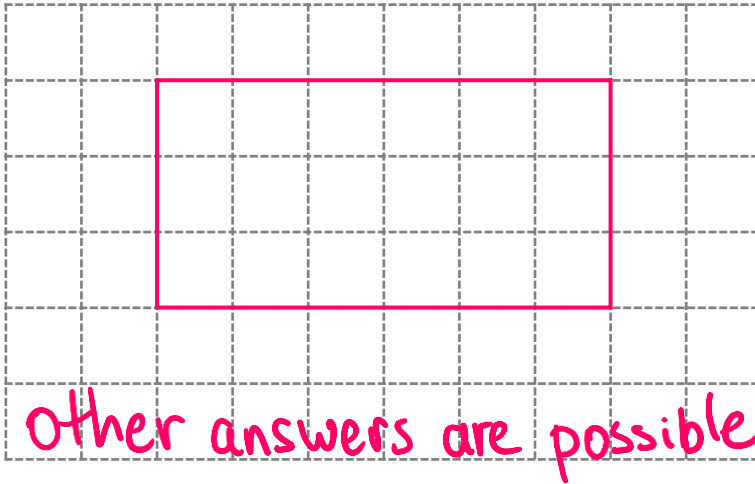
$$\frac{1}{2} \times 6 \times 4$$

$$\text{Answer } 12 \text{ cm}^2$$

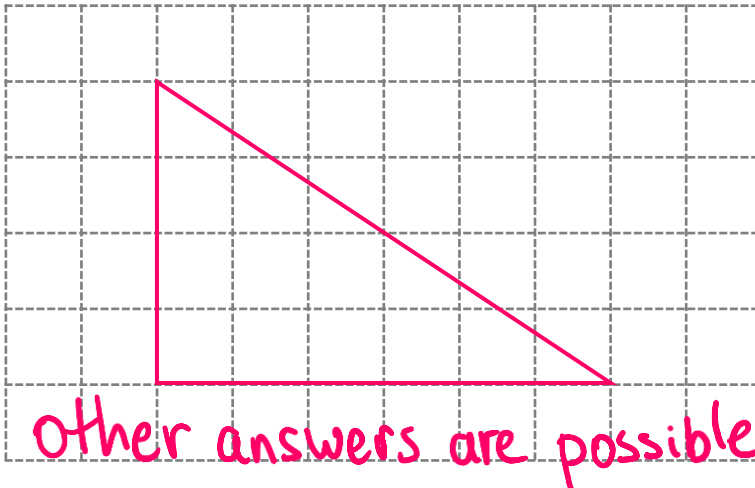




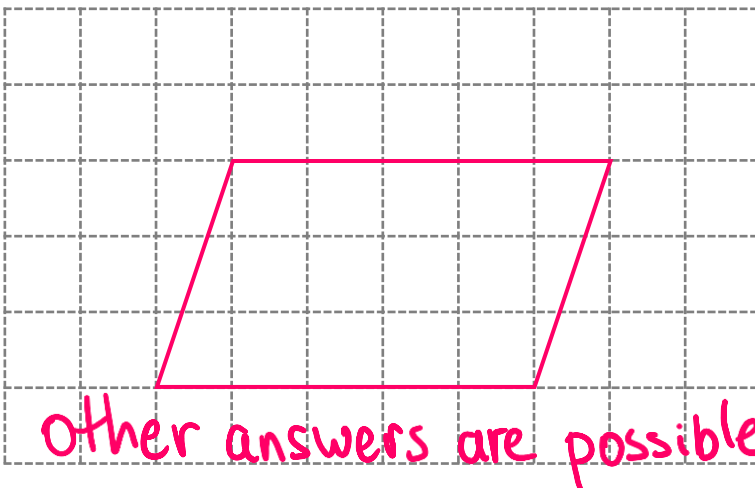
6 (a) On the centimetre grid below, draw a rectangle with an area of 18 cm^2 [1 mark]



6 (b) On the centimetre grid below, draw a triangle with an area of 12 cm^2 [1 mark]

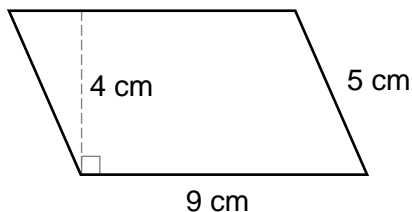


6 (c) On the centimetre grid below, draw a parallelogram with an area of 15 cm^2 [1 mark]





7



Not drawn accurately

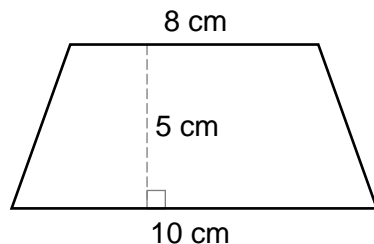
Work out the area of the parallelogram.

[2 marks]

$$9 \times 4$$

Answer 36 cm²

8



Not drawn accurately

Work out the area of the trapezium

[2 marks]

$$\begin{aligned} & \frac{1}{2}(8 + 10) \times 5 \\ & = \frac{1}{2}(18) \times 5 \\ & = 9 \times 5 \end{aligned}$$

Answer 45 cm²

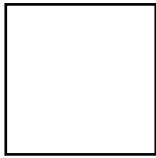




9 Here is a square, triangle and parallelogram.

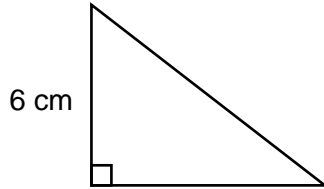
Not drawn accurately

Square



5 cm

Triangle



6 cm

8 cm

Parallelogram



3 cm

10 cm

Put the shapes in order of area, starting with the smallest.

[3 marks]

Square $5 \times 5 = 25 \text{ cm}^2$

Triangle $\frac{1}{2} \times 8 \times 6 = 24 \text{ cm}^2$

Parallelogram $10 \times 3 = 30 \text{ cm}^2$

Smallest area

Triangle

Square

Largest area

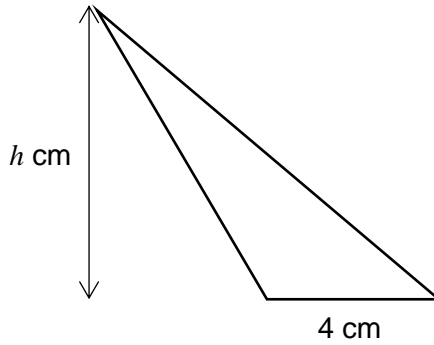
Parallelogram





10

A triangle has a base of 4 cm and a perpendicular height of h cm.



Not drawn accurately

The area of the triangle is 20 cm^2
Work out the value of h .

[2 marks]

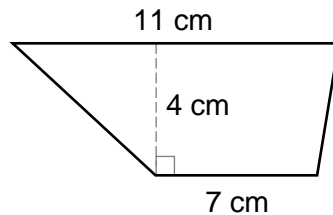
$$\frac{1}{2} \times 4 \times h = 20$$

$$2h = 20$$

$$h = 10$$

$h =$ 10 cm

11



Not drawn accurately

Work out the area of the trapezium

[2 marks]

$$\frac{1}{2} (7 + 11) \times 4$$

$$= \frac{1}{2} (18) \times 4$$

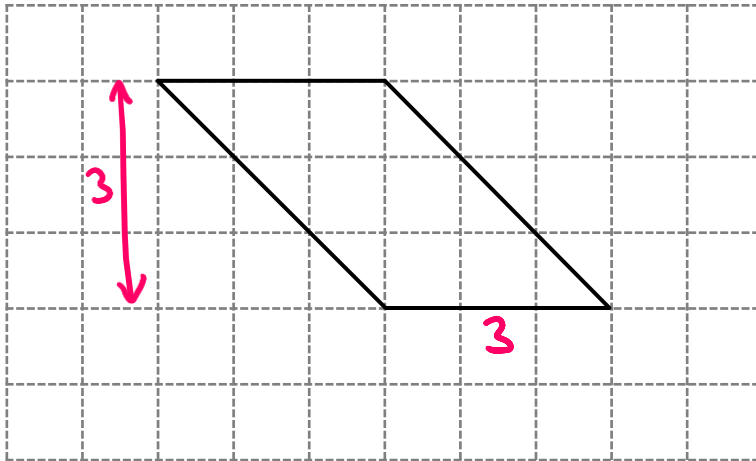
$$= 9 \times 4$$

Answer 36 cm^2





12 (a) A parallelogram is drawn on a centimetre grid.

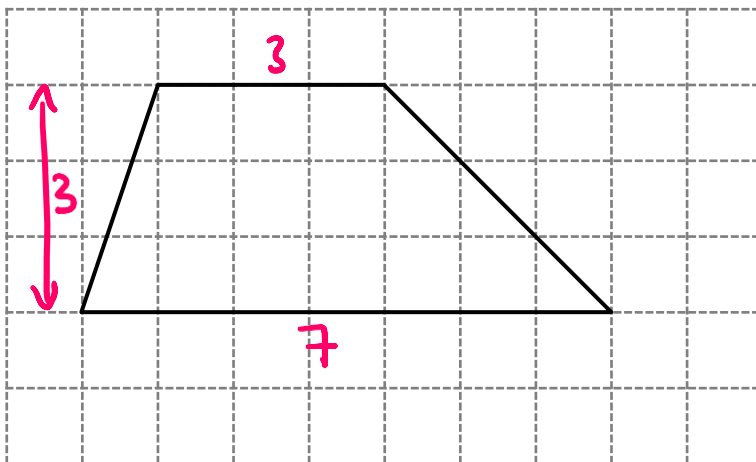


Work out the area of the parallelogram.

[1 mark]

Answer 9 cm²

12 (b) A trapezium is drawn on a centimetre grid.



Work out the area of the trapezium

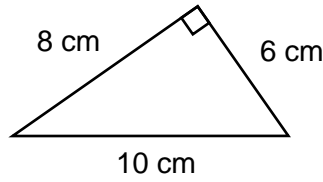
[2 marks]

Answer 15 cm²





13



Not drawn accurately

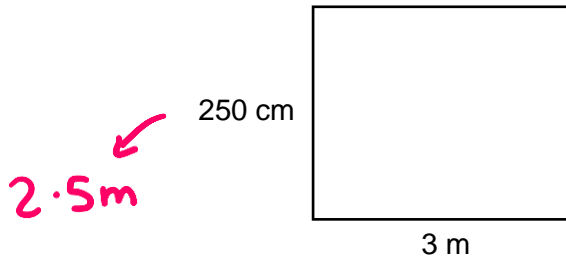
Work out the area of the triangle.

[2 marks]

$$\frac{1}{2} \times 8 \times 6$$

Answer 24 cm²

14



Not drawn accurately

Work out the area of the rectangle.
Give your answer in square metres.

[2 marks]

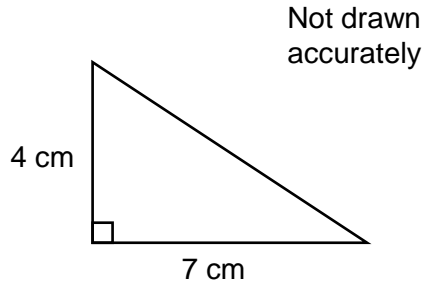
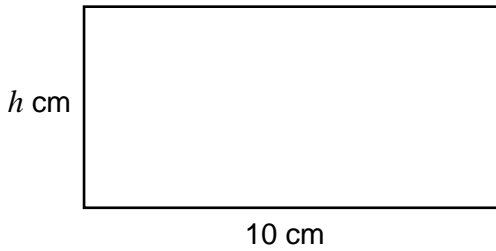
$$2.5 \times 3$$

Answer 7.5 m²





15 Here is a rectangle and a triangle.



The area of the rectangle is 3 times the area of the triangle.
Work out h , the height of the rectangle.

[4 marks]

$$\text{Area of triangle} = \frac{1}{2} \times 7 \times 4$$

$$= 14 \text{ cm}^2$$

$$3 \times 14 = 42 \text{ cm}^2$$

$$42 \div 10 = 4.2$$

$$h = 4.2 \text{ cm}$$

16 A square has side length 3.2 cm

Work out the area of the square, giving your answer in square centimetres.

[3 marks]

$$3.2 \times 3.2$$

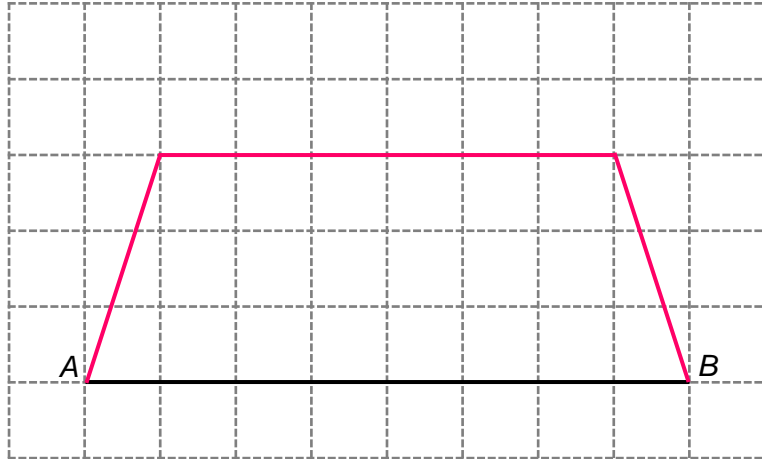
$$\begin{array}{r} 32 \\ 32 \\ \hline 64 \\ 960 \\ \hline 10,24 \end{array}$$

$$\text{Answer } 10.24 \text{ cm}^2$$





17 The line AB is one side of a trapezium $ABCD$ which has an area of 21cm^2 . The line AB has been drawn on the centimetre grid below.



Complete a possible trapezium $ABCD$.

[2 marks]

18 Here are two rectangles.

	Rectangle A		Rectangle B	
2 cm	18cm^2		18m^2	Not drawn accurately
	9 cm	3 m	6 m	

Tick the correct statement

[1 mark]

Rectangle A has a greater area than Rectangle B.

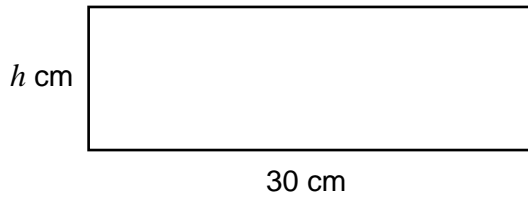
Rectangle B has a greater area than Rectangle A.

Rectangle A has the same area as Rectangle B.





19 A rectangle has a base of 30 cm and a height of h cm.



Not drawn accurately

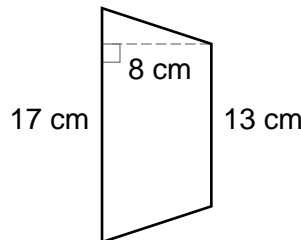
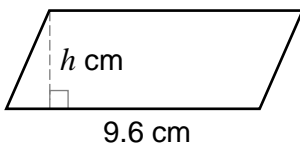
The area of the rectangle is 15 cm^2
Work out the value of h .

[1 mark]

$$15 \div 30 = 0.5$$

$$h = 0.5 \text{ cm}$$

20 Here is a parallelogram and a trapezium



Not drawn accurately

The area of the parallelogram one fifth of the area of the trapezium
Work out h , the perpendicular height of the parallelogram.

[4 marks]

$$\begin{aligned} & \frac{1}{2}(13+17) \times 8 \\ &= \frac{1}{2}(30) \times 8 \\ &= 15 \times 8 \\ &= 120 \text{ cm}^2 \end{aligned}$$

$$120 \div 5 = 24$$

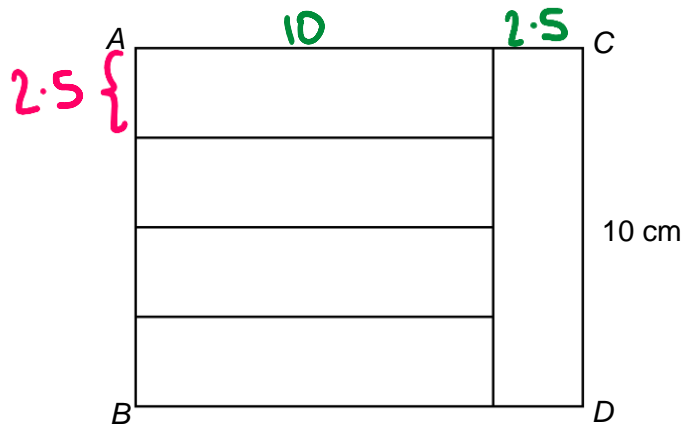
$$24 \div 9.6 = 2.5$$

$$\text{Answer } 2.5 \text{ cm}$$





21 Five congruent rectangles are joined to make rectangle $ABCD$.



Work out the area of rectangle $ABCD$.

[4 marks]

$$10 \div 4 = 2.5$$

$$10 + 2.5 = 12.5$$

$$12.5 \times 10 = 125$$

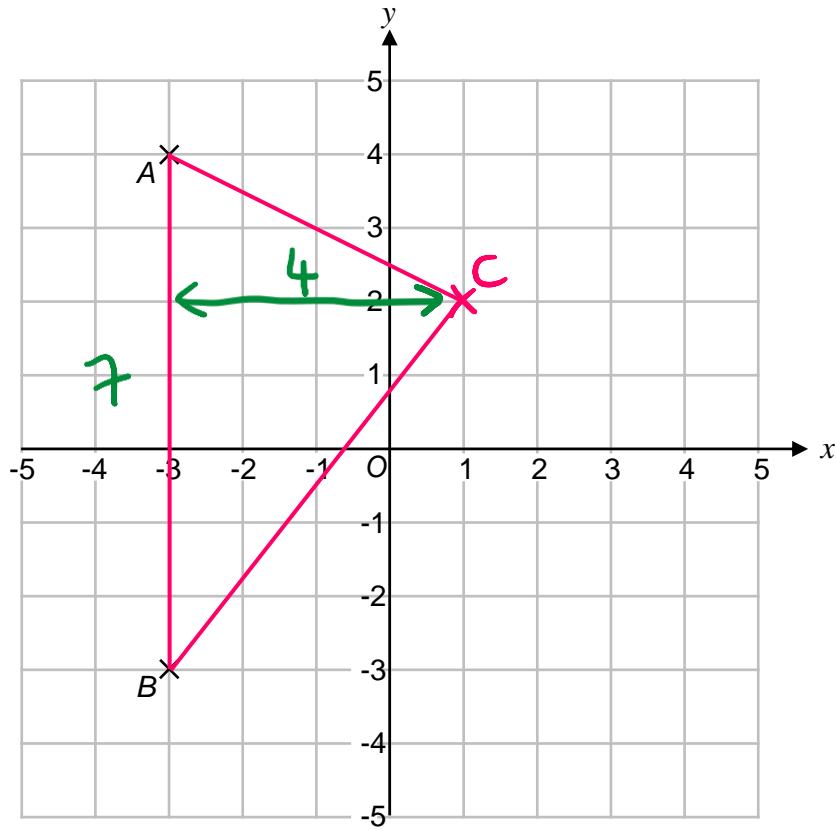
Answer 125 cm²





22

Points *A* and *B* are shown on the centimetre grid below.



$C = (1, 2)$

Work out the area of triangle *ABC*.

[3 marks]

$$\frac{1}{2} \times 7 \times 4$$

Answer

14

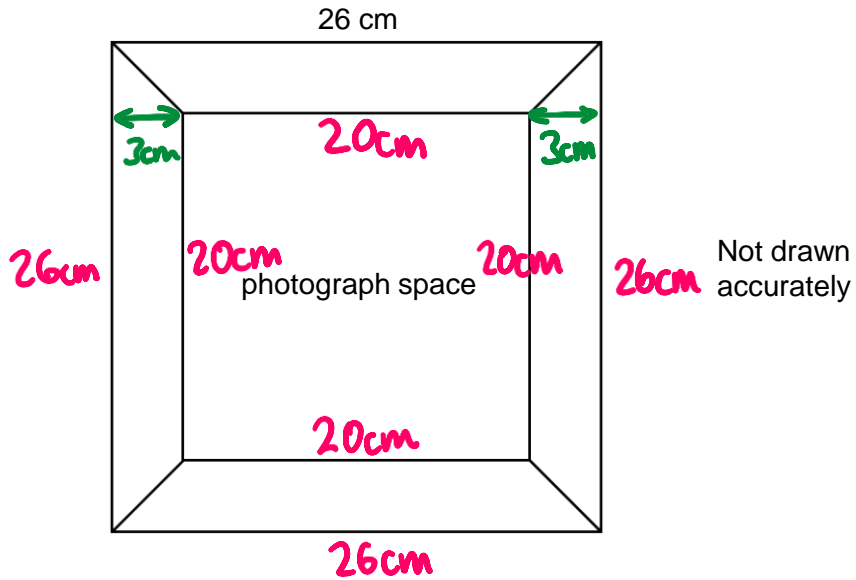
cm²





23

A picture frame is made from four congruent trapeziums.



The width of the picture frame is 26 cm.

A square photograph will be placed in the photograph space.

The area of the photograph space is 400 cm²

Work out the area of one of the trapeziums that forms the picture frame. [4 marks]

$$\sqrt{400} = 20 \text{ cm}$$

$$26 - 20 = 6$$

$$6 \div 2 = 3$$

$$\begin{aligned} & \frac{1}{2} (20 + 26) \times 3 \\ &= \frac{1}{2} (46) \times 3 \\ &= 23 \times 3 \end{aligned}$$

69

Answer _____ cm²



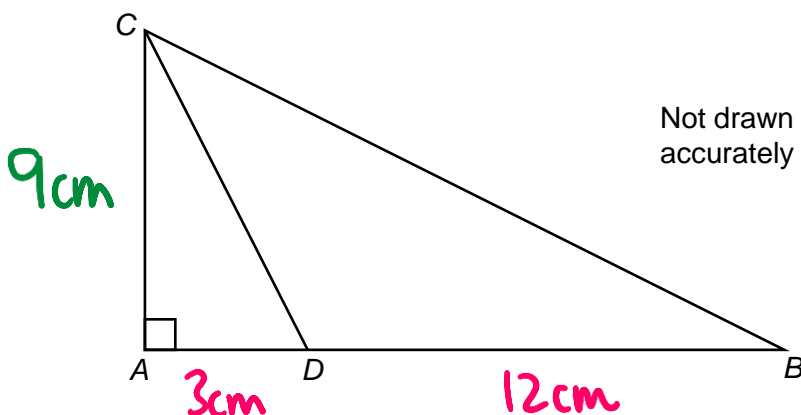
7

Turn over ►



24

ABC is a triangle.



ABD is a straight line.

AB = 15 cm

AD : DB = 1 : 4

AD : AC = 1 : 3

Work out the area of triangle BCD.

[4 marks]

$$1 + 4 = 5$$

$$15 \div 5 = 3$$

$$1 \times 3 = 3\text{cm}$$

$$4 \times 3 = 12\text{cm}$$

$$AD : AC$$

$$\times 3 \left(\begin{array}{l} 1 : 3 \\ \downarrow \\ 3 : 9 \end{array} \right) \times 3$$

$$AC = 9\text{cm}$$

$$\frac{1}{2} \times 12 \times 9 = 54\text{ cm}^2$$

Answer 54 cm²

