Name:

2.1 Area of a triangle

1 a Explain in words how to find the area of a triangle.
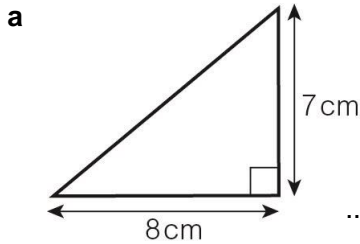
....

   b Write a formula connecting
   the area of a triangle (A),
   its base length (b) and its height (h).

....
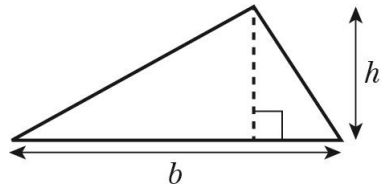
2 Work out the area of each triangle.

a

....

b

....

c

....

d

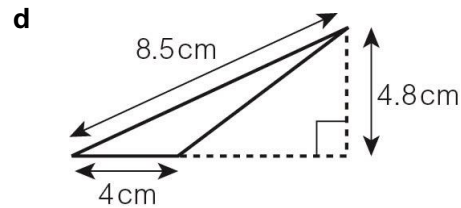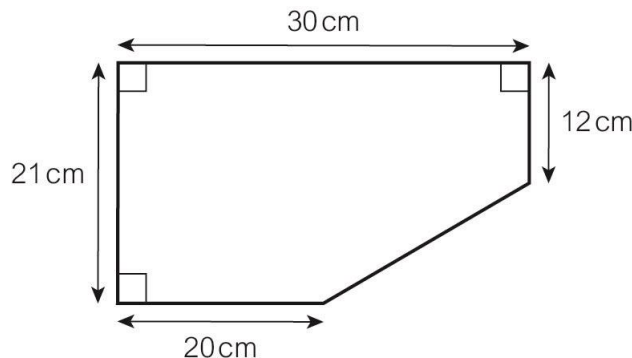......................
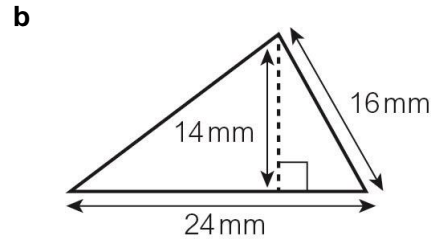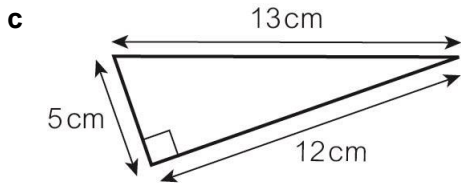
3 (Problem-solving) This compound shape is made from two congruent triangles
and a rectangle.
What is the total area of the shape?

....

4 (Problem-solving) This rectangular piece of card has a triangle cut from one corner.
Calculate the area of the remaining card.

....

Name:

2.1 Area of a triangle

1 **Problem-solving** Draw and label as many right-angled triangles with an area of 18 cm² as you can, using only whole numbers for the sides.
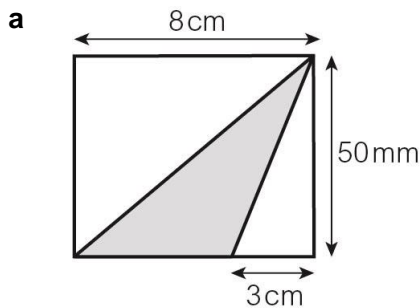
How will you know when you have drawn them all?

....

2 A triangle has a base 4 cm and an area of 20 cm².

a **Problem-solving** What is the perpendicular height? ....

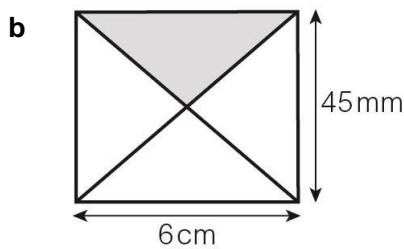**b** **Reasoning** Do you have enough information here to draw an accurate sketch of this triangle? Explain why.

....

3 **Problem-solving** Work out the area of the shaded part of each shape.

a

8 cm

50 mm

3 cm

....

b

45 mm

6 cm

....
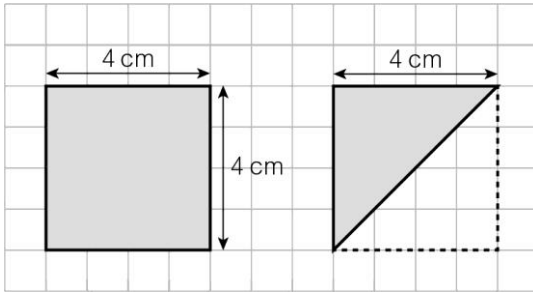
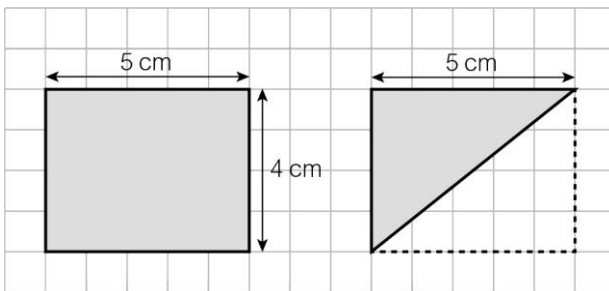# Maths Progress Support 2

2.1 Area of a triangle

1 Work out the area of each rectangle or square and of each shaded triangle.

a

....

....

b

....

....

....

c

....
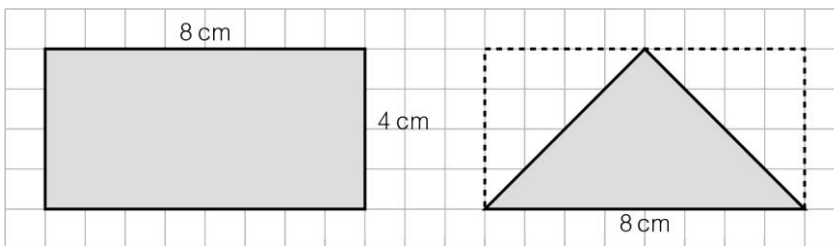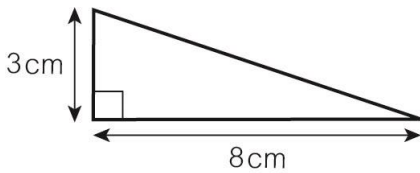
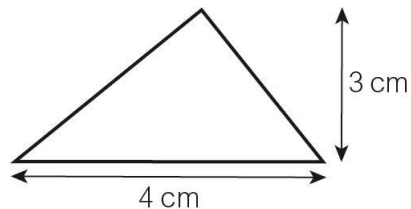**2** Complete the drawing to make each triangle into a rectangle.
Work out the area of each triangle.

a

3 cm

8 cm

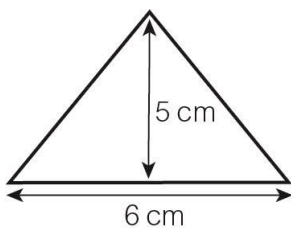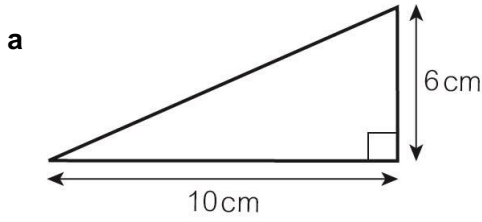........................

b

3 cm

4 cm

....

c

5 cm

6 cm

....

3 Work out the area of each triangle.
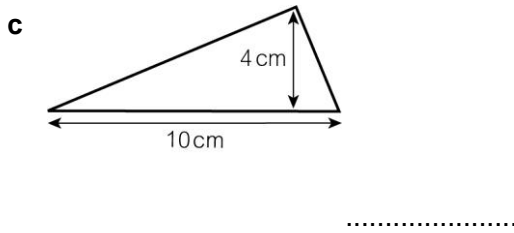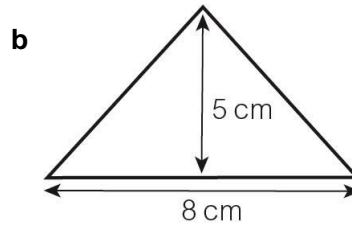
a

6 cm

10 cm

....

b

5 cm

8 cm

....

c

4 cm

10 cm

....

4 Work out the total area of each shape.

a

5 cm   5 cm

8 cm   4 cm

....

b

9 cm

10 cm   5 cm

8 cm

....

5 Work out the total area of each shape.

a

5 cm

4 cm

10 cm

....

b

6 cm

7 cm

8 cm

....

Answers
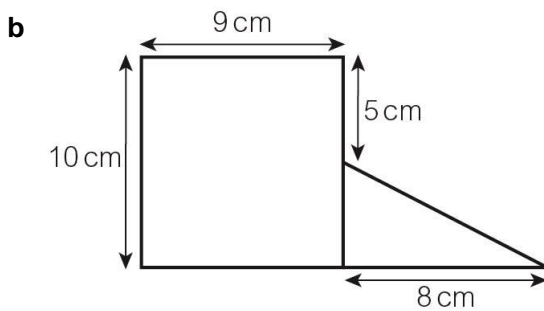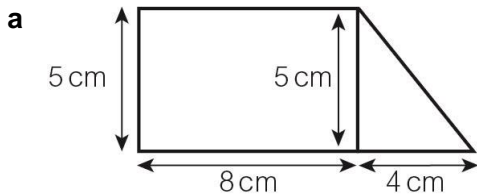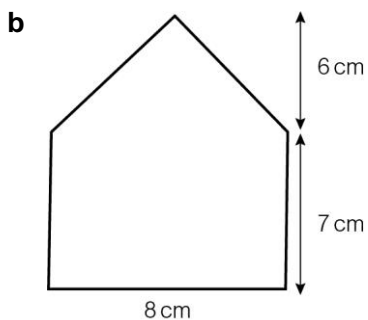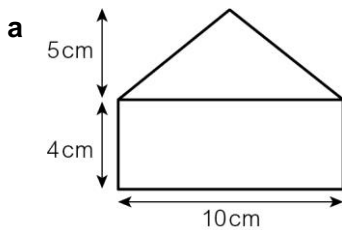
2.1 Area of a triangle

Core

1 **a** Half the base multiplied by the height   **b** $A = \dfrac{1}{2}bh$

2 **a** $28\ cm^2$ **b** $168\ mm^2$ **c** $30\ cm^2$ **d** $9.6\ cm^2$

3 $152\ cm^2$

4 $585\ cm^2$

Depth

1 Students draw and label 5 right-angled triangles: 36 cm by 1 cm, 18 cm by 2 cm, 12 cm by 3 cm, 9 cm by 4 cm and 6 cm by 6 cm. You know you have drawn them all when you have used all the factor pairs of 36 as side lengths.

2 **a** 10 cm
    b No, as we do not know either of the other two lengths; there are multiple possible triangles that have that base and perpendicular height.

3 **a** $12.5\ cm^2$ **b** $6.75\ cm^2$

Support

1 **a** $16\ cm^2$ and $8\ cm^2$ **b** $20\ cm^2$ and $10\ cm^2$ **c** $32\ cm^2$ and $16\ cm^2$

2 **a** $12\ cm^2$ **b** $6\ cm^2$ **c** $15\ cm^2$

3 **a** $30\ cm^2$ **b** $20\ cm^2$ **c** $20\ cm^2$

4 **a** $50\ cm^2$ **b** $110\ cm^2$

5 **a** $65\ cm^2$ **b** $80\ cm^2$