Planner

Area

- Calculating the area of a triangle, parallelogram and trapezium
- Calculating the area of compound shapes
- Converting between measures of area such as mm^2 and cm^2

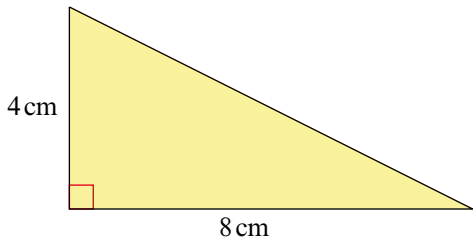
Keywords

You should know

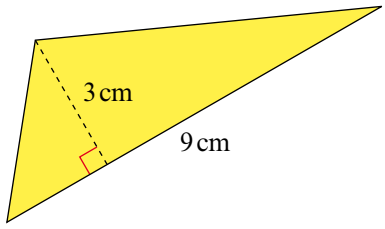
explanation 1a | explanation 1b | online

1 Calculate the area of these triangles.

a



b



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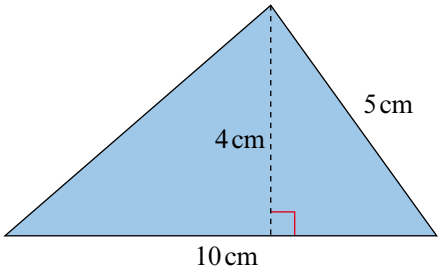

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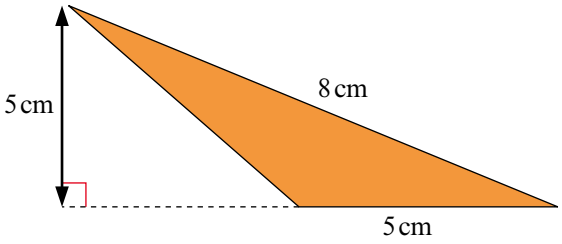
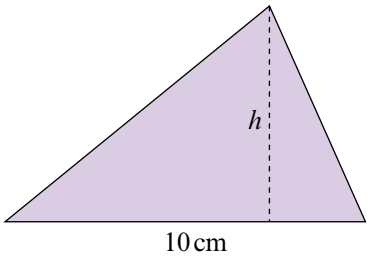
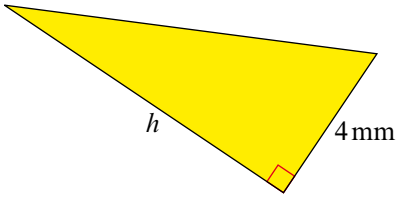


2 Calculate the height of each triangle. (The area and the base length of each triangle is given.)

a Area = $25\,cm^2$



b Area = $20\,mm^2$



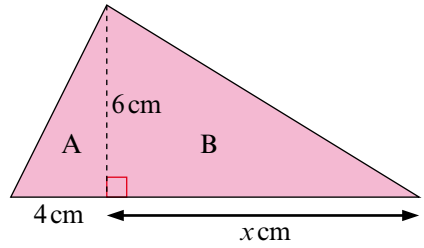
3 Triangle B has double the area of triangle A.

The height of both triangles is 6 cm.

a Calculate the area of triangle A.

b What is the area of triangle B?

c Calculate the value of x.

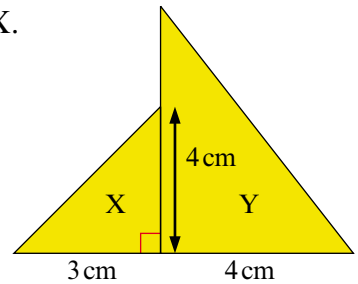


4 The area of triangle Y is three times that of triangle X.

a Calculate the area of triangle X.

b Calculate the area of triangle Y.

c Calculate the height of triangle Y.

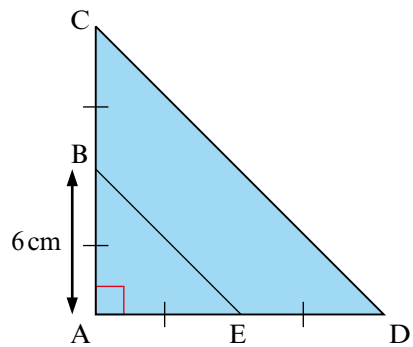


5 Look at this diagram.

a Calculate the area of triangle ABE.

b Calculate the area of triangle ACD.

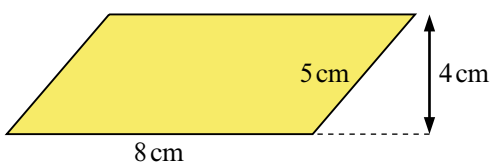
c Calculate the area of the trapezium BCDE.



explanation 2a explanation 2b

6 Calculate the area of these parallelograms.

a



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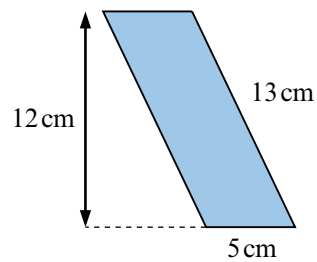

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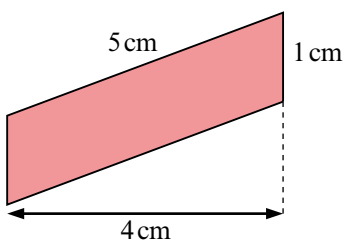

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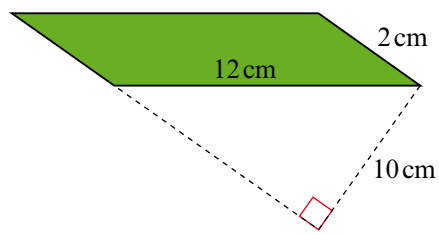
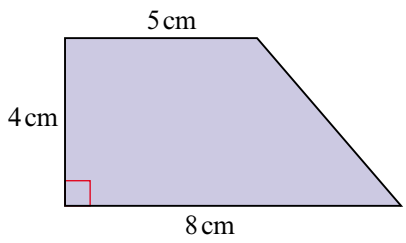


explanation 3a | explanation 3b | explanation 3c | online

7 Calculate the area of these trapeziums.

a



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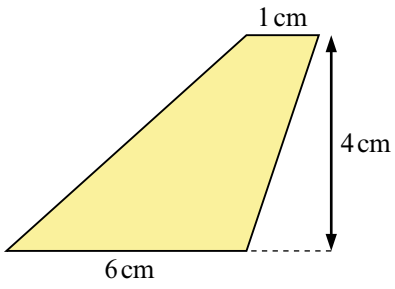

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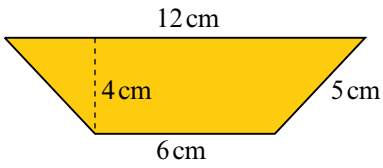

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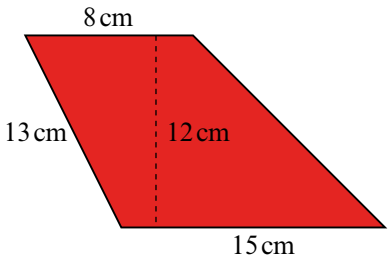
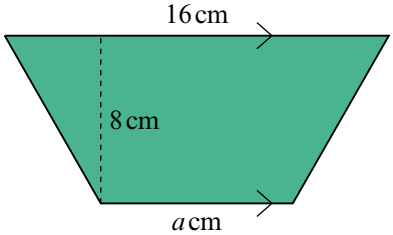
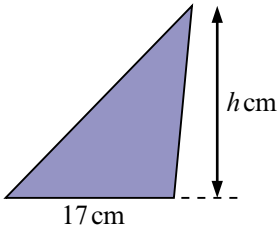


8 Calculate the marked lengths in these shapes.

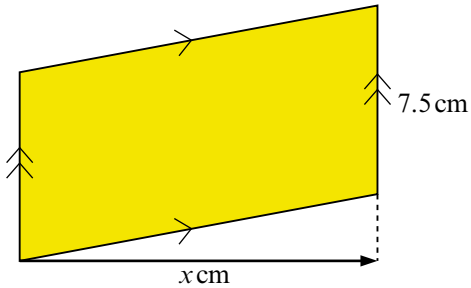
a Area = 96 cm^2



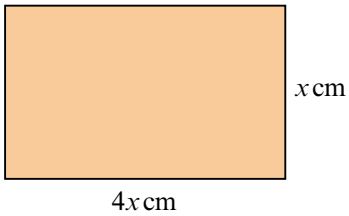
b Area = 51 cm^2



c Area = 150 cm^2



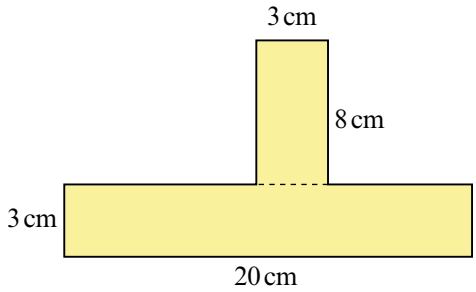
d Area = 100 cm^2



explanation 4 online

9 Calculate the area of these compound shapes.

a



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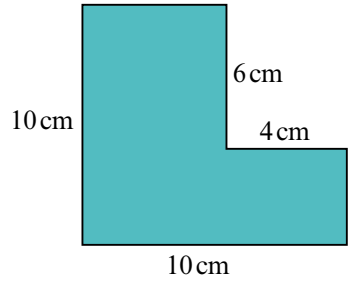

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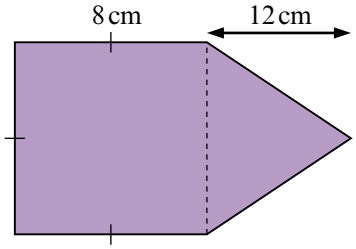

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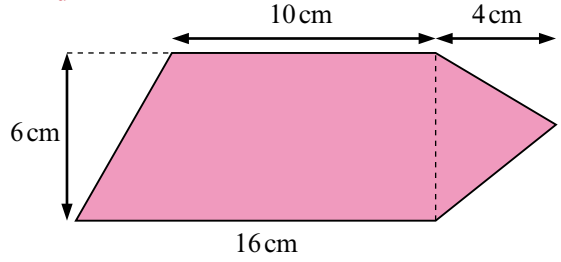
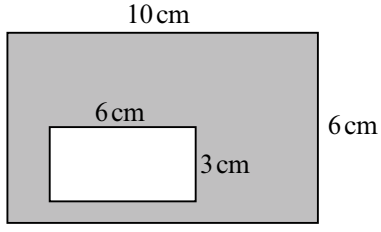


10 Calculate the shaded area of each of these.

a



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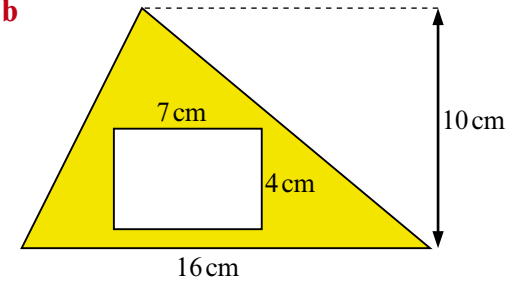
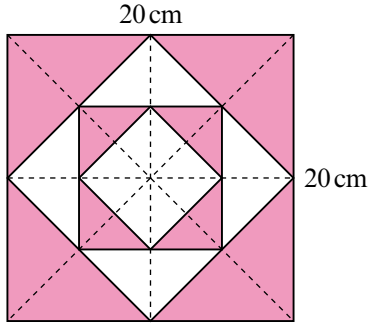
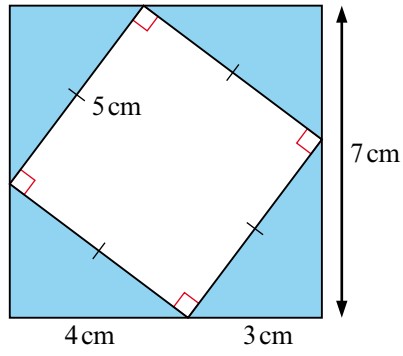


c

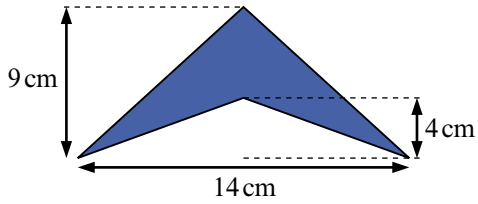


d

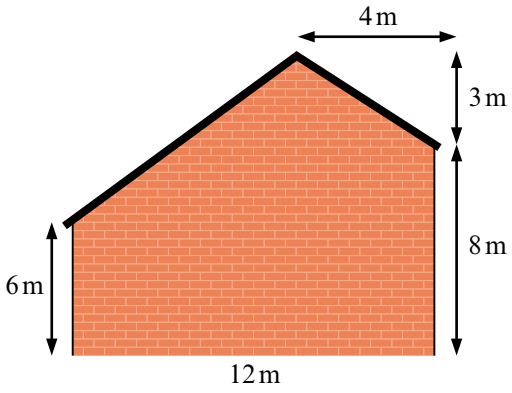


11 An arrowhead has dimensions as shown.

Showing your method clearly, calculate the shaded area.



12 The side of a house has the dimensions shown. Showing your method clearly, calculate the area of this side of the house.



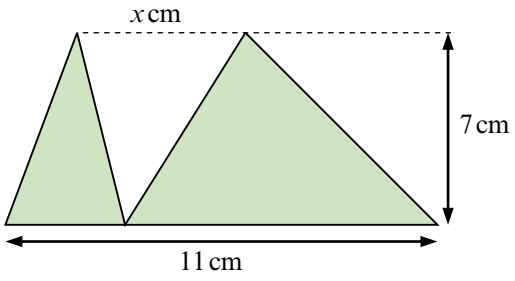
Hint: can you divide the shape into two trapeziums?

13 **a** Calculate the area that is shaded when x has these values.

i $x = 6$

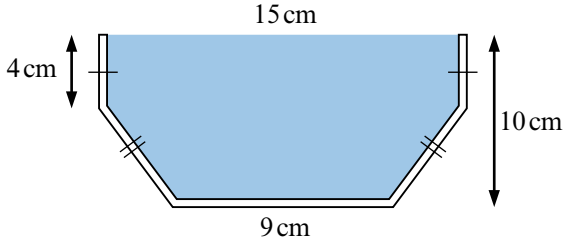
ii $x = 8$

b What do you notice about your answers to part **a**?
Explain why this is.

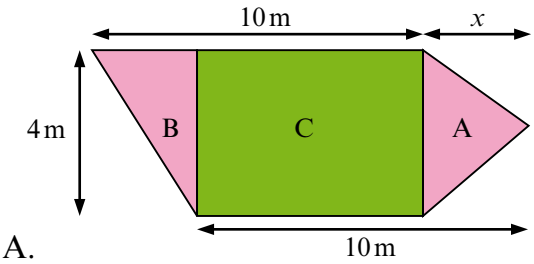


c A piece of guttering has a cross-section as shown.

Calculate the area of the cross-section.



14 A garden consists of a rectangular patch of grass, C, and two triangular flowerbeds, A and B.



a Write an expression for the area of A.

b Write an expression for the area of B.

c Write an expression for the area of C.

d Work out the total area of the garden.

explanation 5

15 Measure a page of your exercise book.

a What is its area in square centimetres?

b What is its area in square millimetres?

16 Convert these areas to square millimetres.

a $15\,cm^2$ **b** $2.5\,cm^2$ **c** $580\,cm^2$ **d** $0.038\,cm^2$

17 Convert these areas to square centimetres.

a $25\,000\,mm^2$ **b** $6700\,mm^2$ **c** $37\,mm^2$ **d** $456.78\,mm^2$

18 A standard A6 postcard is 147 mm by 105 mm.

a What is its area in square millimetres?

b What is its area in square centimetres?

c A 1st class stamp (2.0 cm wide and 2.4 cm high) is stuck on the postcard. What percentage of the area of the postcard does it cover?

19 Put these areas in order of size, smallest first.

$0.017\,m^2$ $2.61\,cm^2$ $72\,mm^2$ $582\,mm^2$ $68.4\,cm^2$

20 An A0 sheet of paper has an area of $1\,m^2$.

a What is its area in square centimetres?

b What is its area in square millimetres?