

Compound Shapes with Algebra - Method



Key idea

Split the shape into two simpler shapes. Multiply each pair of sides, then **add** (L-shape) or **subtract** (hole).

A kite or trapezium still splits into two triangles or a rectangle+triangle – just keep the $\frac{1}{2}$.

L-shape example

Rectangles: 3 by $2x$, and 7 by 2.

$$(3)(2x) + (7)(2) \\ = 6x + 14$$

Distribute the whole bracket:

$$3(2x+1) = 6x+3, \text{ not } 6x+1.$$

 = **copy this into your book.** Boxes without a pencil are just to read.

Extension - Solve for the Unknown



Given the area, find x



Simplified area: $9x + 12$. The shape's area is 75 cm^2 .

$$9x + 12 = 75$$

$$9x = 63$$

$$x = 7$$

Key idea



Once you know x , use it for the rest of the question – a perimeter, or the area at a different value.

$$\text{Perimeter} = 6x + 14 = 6(7) + 14 = 56 \text{ cm.}$$



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