

Similar Shapes - Notes and Steps



Key idea

Similar shapes have equal angles and the same shape — but a different size.

Every matching side is multiplied by the same **scale factor**.

Scale factor

$$\text{scale factor} = \frac{\text{big side}}{\text{small side}}$$

A side grows from 5 cm to 15 cm:

$$\text{scale factor} = \frac{15}{5} = 3.$$

Common mistake

Pair the matching sides first.

Comparing the wrong sides gives the wrong ratio.



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

Finding a Missing Side



Key idea



To go from the small shape to the large one, **multiply** by the scale factor.

To go the other way, **divide**.

Example



Small rectangle 6×10 cm; a similar larger one has short side 15 cm.

$$\text{scale factor} = \frac{15}{6} = 2.5$$

$$\text{long side} = 10 \times 2.5 = 25 \text{ cm.}$$

Common mistake

Equal side *differences* do not prove similarity — only equal **ratios** do.