Similar shapes: fact sheet

Planner week 14 · Learn these facts

Congruent

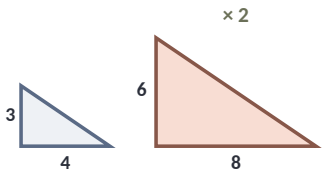
same shape

same size

Can be turned or flipped

Sides and angles all equal

Similar



Same shape, different size

Every side × the same number

Scale factor

new ÷ old

15 ÷ 10 = 1.5

Use a pair of matching sides

Both lengths known

Bigger shape

× scale factor

6.4 × 1.5 = 9.6 cm

Small to big: multiply

Smaller shape

÷ scale factor

15 ÷ 1.5 = 10 cm

Big to small: divide

Matching sides

same angles

→ matching sides

Use the angle marks

Redraw the same way round

Not similar

+ 4 to each side

is not similar

Similar means multiply

12 ÷ 8 ≠ 10 ÷ 6

Angles

Similar	angles stay the same
Sides	all × scale factor

Key words

- **Congruent** exactly the same shape and size
- **Similar** the same shape, one is an enlargement
- **Scale factor** how many times bigger
- **Corresponding** in the matching position

Exam tips

- Find a pair of matching sides you know both of.
- Scale factor = new ÷ old.
- Going bigger: multiply. Going smaller: divide.
- Check: the bigger shape should have the bigger answer.
- Angles do not change in similar shapes.
- Show similar: each pair of sides has the same scale factor.

Similar and congruent shapes: fact sheet

Similar shapes · Planner week 14 · Learn the method

Worked example

QUESTION

Rectangle B is an enlargement of rectangle A.
Rectangle A is 4 cm wide and 6 cm long. Rectangle B is 10 cm wide.
Work out the length of rectangle B.

ANSWER

1. Scale factor = 10 ÷ 4 = 2.5
2. Length of B = 6 × 2.5

15 cm

Scale factor = new length ÷ old length.

How to do it

1. Match up the sides using the angles.
2. Find a pair of matching sides you know.
3. Scale factor = big ÷ small.
4. Small to big: multiply. Big to small: divide.
5. Check the answer looks the right size.

Model answer:

6 × 2.5 = 15 cm

Watch out

- Adding instead of multiplying (10 − 4 = 6, so 6 + 6 ×).
- Matching the wrong sides.
- Multiplying when you should divide.