Area and volume scale factors

Exit ticket ANSWERS Name _____

1. Two similar shapes have lengths 3 cm and 12 cm.
Write down the area scale factor.

16

2. Two similar triangles have bases 2 cm and 6 cm.
The small triangle has an area of 4 cm^2. Find the area of the large triangle.

36 cm^2

3. Two similar cylinders have heights 5 cm and 10 cm.
The small cylinder has a volume of 6 cm^3.
Find the volume of the large cylinder.

48 cm^3

The Maths Habit

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NEXT LESSON

1 **Two similar shapes have lengths 3 cm and 12 cm. Write down the area scale factor.**

16

TESTS The area scale factor: the length scale factor squared

LOOK FOR
- *4* the length scale factor: square it for an area
- *8* 4×2 is not 4^2: $4^2 = 4 \times 4 = 16$

FIX IT

Two similar shapes have lengths 4 cm and 20 cm. Write down the area scale factor. *25*

---

2 **Two similar triangles have bases 2 cm and 6 cm. The small triangle has an area of 4 cm^2. Find the area of the large triangle.**

36 cm^2

TESTS Finding an area: length scale factor, square it, multiply

LOOK FOR
- *12 cm^2* multiplied by the length scale factor 3, not by $3^2 = 9$
- *108 cm^2* cubed: $\times 27$ is for a volume

FIX IT

Two similar rectangles have widths 3 cm and 12 cm. The small one has an area of 2 cm^2. Find the area of the large one. *32 cm^2*

---

3 **Two similar cylinders have heights 5 cm and 10 cm. The small cylinder has a volume of 6 cm^3. Find the volume of the large cylinder.**

48 cm^3

TESTS Finding a volume: the length scale factor cubed

LOOK FOR
- *12 cm^3* multiplied by the length scale factor 2, not by $2^3 = 8$
- *24 cm^3* squared: $\times 4$ is for an area

FIX IT

Two similar cones have heights 2 cm and 6 cm. The small one has a volume of 5 cm^3. Find the volume of the large one. *135 cm^3*