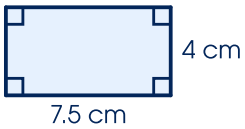
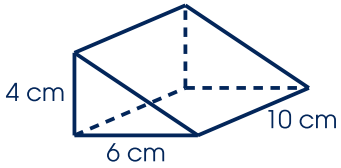
GCSE HIGHER · REVISION MAT 5

Area and volume of shapes and prisms

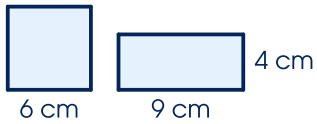
1 Find the area of a rectangle 7.5 cm by 4 cm.



2 Find the volume of this prism.



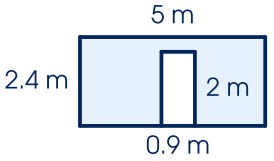
3 Show that a 6 cm square and a 9 cm by 4 cm rectangle have the same area.



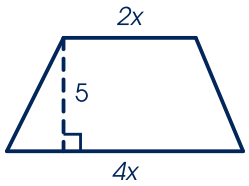
4 A wall is 5 m by 2.4 m with a 0.9 m by 2 m door.

1 litre of paint covers 10 m².

How much paint is needed for 2 coats?

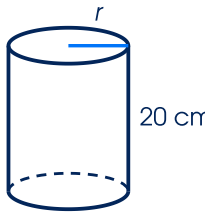


5 Show that a trapezium with parallel sides $2x$ and $4x$ and height 5 has area $15x$.



6 A cylinder has volume 500π cm³ and height 20 cm.

Find its radius and curved surface area.

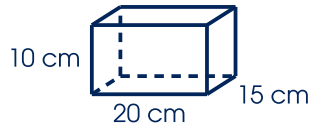


7 Show that doubling the height of a cylinder doubles its volume, but doubling the radius multiplies it by 4.

8 An open box is 20 cm × 15 cm × 10 cm.

Cans of radius 2.5 cm and height 10 cm stand upright inside.

What percentage of the box is filled by the most cans?



ANSWERS · REVISION MAT 5

Area and volume of shapes and prisms

1 **30 cm²**

2 $\frac{1}{2} \times 6 \times 4 \times 10$

120 cm³

3 **Both are 36 cm².**

4 $12 - 1.8 = 10.2$ m²

$\times 2 = 20.4$ m²

2.04 litres

5 $\frac{1}{2}(2x + 4x) \times 5$

$= 15x$

6 $r^2 = 25$, $r = 5$

$2\pi \times 5 \times 20 = 200\pi$ cm²

7 $\pi r^2(2h) = 2\pi r^2 h$

$\pi(2r)^2 h = 4\pi r^2 h$

8 $4 \times 3 = 12$ cans

$12 \times \pi \times 6.25 \times 10 = 2356$

78.5%

Mr&Mrs MATHS