Area and Volume Problems

Starter

1. **(Review of last lesson)** The volume of a cylinder to 260 cm^3. Given that its height is 11 cm, calculate its diameter to 3 s.f..

2. **(Review of last lesson)** A solid cylinder of radius 10 cm and length 14 cm is melted down and recast into a solid cube. Find the length of the side of the cube.

Notes

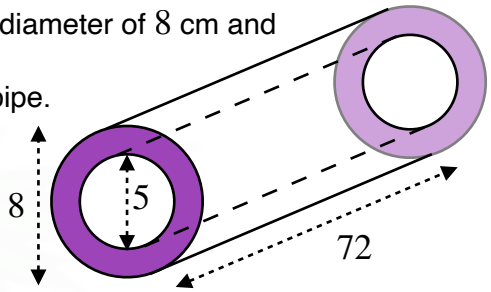
You will already have met the formula $\text{Density} = \dfrac{\text{Mass}}{\text{Volume}}$ in science.

E.g. 1 A cylindrical metal pipe, of length 72 cm, has external diameter of 8 cm and internal diameter of 5 cm.

(a) Calculate the volume of metal in the length of pipe.

(b) Given that the density of the metal is 6 g/cm^3, find the mass of the pipe.

Give your answers exactly and include units.



E.g. 2 Water flows through a circular pipe of internal diameter 3 cm at a speed of 16 cm/s. If the pipe is full, how many litres of water issue from the pipe in one minute?

Video: Density

Solutions to Starter and E.g.s

Exercise

9-1 class textbook:	p439 M13.6 Qu 1, 2, 4-8 (3 needs trigonometry)
A*-G class textbook:	p392 M13.2 Qu 13-22
9-1 homework book:	p149 M13.5/13.6 Qu 7-12
A*-G homework book:	p110 M13.2 Qu 6-10

Summary

$\text{Density} = \dfrac{\text{Mass}}{\text{Volume}}$