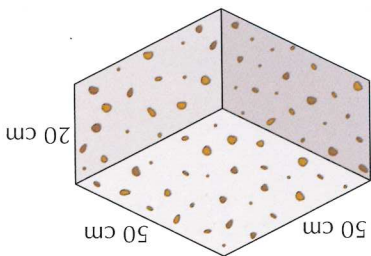


7 This is a block of concrete in the shape of a cuboid. The density of concrete is 2400 kg/m^3 . Calculate the mass of the block of concrete.



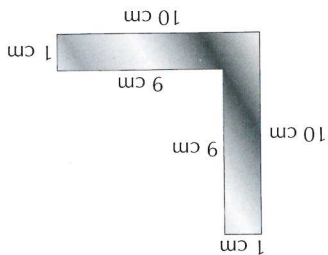
8 A paddling pool has a capacity of 200 litres. It is filled at a rate of 25 litres/minute.

- a Work out how long it takes to fill the pool.
 b The rate of filling the pool is increased by 25%. Work out the percentage decrease in the time to fill the pool.

9 A piece of metal has a volume of 150 cm^3 and a mass of 1.23 kg. Calculate the density of the metal:

- a in grams per cubic centimetre (g/cm^3) b in kilograms per cubic metre (kg/m^3).

10 The cross-section of a steel beam is an L-shape. The beam is 1.5 m long. The density of steel is 7.850 g/cm^3 . Work out the mass of the beam, in kilograms.



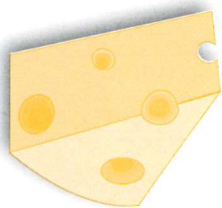
11 The density of the wood in a tree trunk is 850 kg/m^3 .



The tree trunk is approximately a cylinder with a diameter of 30 cm and a length of 4 m. Estimate the mass of the tree trunk.

12 A 235 g piece of cheese costs £2.17.

Work out the cost, in pounds per kilogram (£/kg).



13 At the Aggro petrol station Liz buys 36.6 litres of petrol for £47.18. At the Gofast petrol station she buys 29.3 litres of petrol for £38.79. Which is better value? Justify your answer.

14 The cost of petrol is £1.36 per litre.

Petrol flows into the tank of a car at a rate of 1.45 litres/second. Daniel puts petrol into his car for half a minute.

- a Daniel used the same pump. Her petrol cost £41.23. How long was petrol flowing into the tank of her car?
 b A 140 g bar of chocolate costs £1.80.

The manufacturer increases the mass by 25% and the price by 10%. Work out the reduction in the price per 100 g.

