GCSE HIGHER · REVISION MAT 5

Speed, density and pressure

1 A car travels 90 km in 45 minutes.

Find its speed in km/h.

2 Find the force that gives a pressure of 150 N/m^2 on 2.5 m^2.

3 Explain what the units g/cm^3 tell you about density.

4 Leah drives for 3 hours at 64 km/h and then 2 hours at 54 km/h.

Find her average speed.

5 A 1.2 kg block has volume 400 cm^3.

Show that its density is 3 g/cm^3.

6 A steel ball has radius 3 cm and density 7.8 g/cm^3.

Find its mass.

7 Show that 1 m/s = 3.6 km/h.

8 A train travelling at 30 m/s takes 15 s to pass completely through a 200 m station.

How long is the train?

Mr&Mrs MATHS

ANSWERS · REVISION MAT 5

Speed, density and pressure

1 90 ÷ 0.75

120 km/h

2 150 × 2.5

375 N

3 **Density is the mass in grams of each cubic centimetre.**

4 192 + 108 = 300 km in 5 h

60 km/h

5 1200 ÷ 400

= 3

6 $V = \frac{4}{3}\pi \times 27 = 113.1\ cm^3$

882 g

7 3600 m in an hour

3.6 km

8 Distance = 30 × 15 = 450 m

450 – 200 = 250 m