# Speed, Density and Pressure

GCSE Mathematics • **Foundation Tier** • Grades 4–6 • Non-calculator

Name: _____ Class: _____ Total: _____ / 59

*Show all your working. Marks are given for correct method as well as the final answer.*

**1.** A car travels 150 km in 2 hours. Work out its average speed. **[2 marks]**

**Answer:** _____ **km/h**

**2.** A train travels at 96 km/h for 3 hours. Work out the distance. **[2 marks]**

**Answer:** _____ **km**

**3.** A cyclist covers 42 km at 14 km/h. Work out the time taken. **[2 marks]**

**Answer:** _____ **hours**

**4.** A runner covers 9 km in 45 minutes. Work out the speed in km/h. **[3 marks]**

**Answer:** _____ **km/h**

**5.** A car travels 30 km in 24 minutes. Work out the speed in km/h. **[3 marks]**

**Answer:** _____ **km/h**

**6.** Change 20 m/s into km/h. **[3 marks]**

**Answer:** _____ **km/h**

**7.** Change 90 km/h into m/s. **[3 marks]**

**Answer:** _____ **m/s**

**8.** A journey of 180 km takes 2 hours 30 minutes. Work out the average speed. **[3 marks]**

**Answer:** _____ **km/h**

**9.** A car drives 60 km at 60 km/h then 60 km at 120 km/h. Work out the average speed for the whole journey. **[4 marks]**

**Answer:** _____ **km/h**

**10.** A block has mass 240 g and volume 30 $cm^3$. Work out its density. **[2 marks]**

**Answer:** _____ **$g/cm^3$**

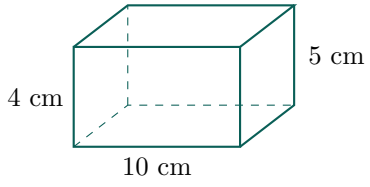
**11.** A metal has density 7.8 $g/cm^3$. Work out the mass of 50 $cm^3$ of it. **[2 marks]**

**Answer:** _____ **g**

**12.** A liquid has density 1.2 $g/cm^3$ and mass 540 g. Work out its volume. **[2 marks]**

**Answer:** _____ **$cm^3$**

**13.** Work out the density of this block, which has mass 1 200 g. **[3 marks]**




**Answer:** _____ **$g/cm^3$**

**14.** Gold has density 19.3 g/cm$^3$. Work out the volume of 1 kg of gold, to 1 d.p. **[3 marks]**

**Answer:** _____ **cm$^3$**

**15.** A force of 60 N acts on an area of 4 m$^2$. Work out the pressure. **[2 marks]**

**Answer:** _____ **N/m$^2$**

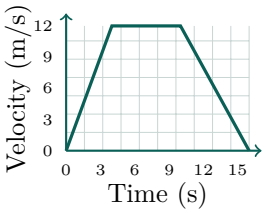
**16.** A pressure of 25 N/m$^2$ acts over 6 m$^2$. Work out the force. **[2 marks]**

**Answer:** _____ **N**

**17.** A force of 900 N gives a pressure of 300 N/m$^2$. Work out the area. **[2 marks]**

**Answer:** _____ **m$^2$**

**18.** The graph shows a car's velocity.




**(a)** Write down the maximum velocity. **[1 mark]**

**(b)** Work out the acceleration over the first 4 seconds. **[3 marks]**

**Answer:** _____

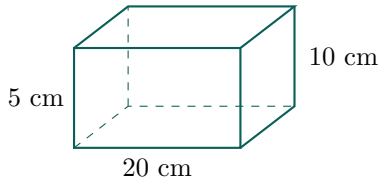
**19.** A train covers 240 km. For the first 90 km it averages 60 km/h; for the rest it averages 100 km/h.

**(a)** Work out the total time for the journey. **[4 marks]**

**(b)** Work out the average speed for the whole journey, to 1 d.p. **[3 marks]**

**Answer:** _____

**20.** A solid cuboid of ice has density 0.92 g/cm$^3$.




**(a)** Work out its volume. **[2 marks]**

**(b)** Work out its mass in kilograms. **[3 marks]**

**Answer:** _____

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