

Interleaved: speed, density and pressure



1

A cyclist rides 45 km in 2.5 hours.
Work out her average speed.

Which method? ☒ Speed ☐ Density ☐ Pressure

$$\text{speed} = \text{distance} \div \text{time} = 45 \div 2.5$$

Answer 18 km/h

2

A block of oak has a mass of 1800 g and a volume of 2500 cm³. Work out its density.

Which method? ☐ Speed ☒ Density ☐ Pressure

Answer _____

3

A force of 600 N acts on an area of 1.5 m².
Work out the pressure.

Which method? ☐ Speed ☐ Density ☐ Pressure

Answer _____

4

A train travels at 120 km/h for 45 minutes.
How far does it go?

Which method? ☐ Speed ☐ Density ☐ Pressure

Answer _____

5

A crate stands on an area of 3.2 m² and puts a pressure of 250 N/m² on the floor.
What force does it exert?

Which method? ☐ Speed ☐ Density ☐ Pressure

Answer _____

6

Gold has a density of 19.3 g/cm³.
A gold bar has a mass of 965 g.
Find its volume.

Which method? ☐ Speed ☐ Density ☐ Pressure

Answer _____

7

A statue with a weight of 450 N puts a pressure of 180 N/m² on its plinth.
What area is in contact with the plinth?

Which method? ☐ Speed ☐ Density ☐ Pressure

Answer _____

8

A sprinter runs 400 m at an average speed of 6.4 m/s. How long does she take?

Which method? ☐ Speed ☐ Density ☐ Pressure

Answer _____

Interleaved: speed, density and pressure *further practice*



9

A lorry drives 156 miles in 3 hours 15 minutes. Work out its average speed in miles per hour.

Answer _____

10

A metal cube has sides of 4 cm and a mass of 172.8 g. Work out the density of the metal.

Answer _____

11

A box weighs 120 N. Its base is 0.8 m by 0.5 m. Work out the pressure it puts on the floor.

Answer _____

12

Ice has a density of 0.92 g/cm³.
Work out the mass of 2.5 litres of ice.
Give your answer in kilograms.

Answer _____

13

A drone flies at 15 m/s.
How many kilometres does it fly in 8 minutes?

Answer _____

14

An elephant has a weight of 48,000 N. Each of its four feet has an area of 0.12 m². Work out the pressure on the ground when it stands on all four feet.

Answer _____

15

300 cm³ of a liquid with density 1.2 g/cm³ is mixed with 200 cm³ of a liquid with density 0.8 g/cm³.
Work out the density of the mixture.

Answer _____

16

Ava says a car that travels 90 km in 1 hour 30 minutes has an average speed of 90 ÷ 1.3 = 69.2 km/h. Explain her mistake and find the correct speed.

Answer _____