

GCSE Maths: Density and pressure (Foundation): worksheet

GCSE Maths - Units and Compound Measures - Foundation - Lesson 16.5

Name: _____

Date: _____

Score: _____

14 questions. Write your answers in the spaces. Answers and step-by-step help are free at websink.site/gcse/maths/ch16-units-compound-measures/foundation/density-and-pressure/

Exercise 16G Density and pressure Calculator allowed

- 1** A block has mass 120 g and volume 40 cm³. Work out its density.

Answer: _____

- 2** Work out the density of each object, in g/cm³.

(a) mass 120 g, volume 40 cm³

Answer: _____

(b) mass 780 g, volume 100 cm³

Answer: _____

(c) mass 90 g, volume 120 cm³

Answer: _____

(d) mass 2700 g, volume 1000 cm³

Answer: _____

- 3** Work out the mass of each object.

(a) density 8 g/cm³, volume 25 cm³

Answer: _____

(b) density 2.5 g/cm³, volume 60 cm³

Answer: _____

(c) density 0.9 g/cm³, volume 200 cm³

Answer: _____

(d) density 19.3 g/cm³, volume 10 cm³

Answer: _____

- 4** Work out the volume of each object.

(a) mass 360 g, density 9 g/cm³

Answer: _____

(b) mass 56 g, density 0.8 g/cm³

Answer: _____

(c) mass 5400 g, density 2.7 g/cm³

Answer: _____

(d) mass 193 g, density 19.3 g/cm³

Answer: _____

5 Work out the pressure in each case.

- (a)** force 500 N on an area of 2 m²

Answer:

- (b)** force 90 N on an area of 3 cm²

Answer:

- (c)** force 1200 N on an area of 0.4 m²

Answer:

- (d)** force 48 N on an area of 16 cm²

Answer:

6 Work out the force in each case.

- (a)** pressure 15 N/cm², area 6 cm²

Answer:

- (b)** pressure 200 N/m², area 3.5 m²

Answer:

- (c)** pressure 8 N/cm², area 25 cm²

Answer:

7 Work out the area in each case.

- (a)** force 600 N, pressure 150 N/m²

Answer:

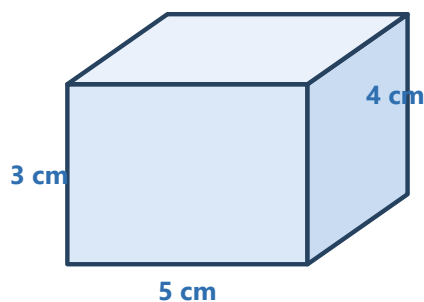
- (b)** force 72 N, pressure 6 N/cm²

Answer:

- (c)** force 2000 N, pressure 500 N/m²

Answer:

8 A solid block is a cuboid 5 cm by 4 cm by 3 cm. Its mass is 468 g. Work out its density.



Answer:

9 Gold has a density of 19.3 g/cm³. A gold bar has volume 250 cm³. Work out the mass of the bar in kilograms.

Answer:

10 A block of wood has mass 450 g and volume 500 cm³. Water has density 1 g/cm³. Will the block float or sink? Give a reason.

Answer:

- 11** Object A has mass 240 g and volume 80 cm³. Object B has mass 150 g and volume 60 cm³. Which object is made from the denser material?

Answer:

- 12** A girl has a weight (force) of 500 N. Each of her feet has an area of 200 cm². Work out the pressure on the ground in N/cm² when she stands (a) on two feet, (b) on one foot.

(a) Two feet

Answer:

(b) One foot

Answer:

- 13** A person of weight 600 N wears either flat shoes (contact area 100 cm² in total) or stiletto heels (contact area 1 cm² in total). Compare the pressure on the floor and explain why stilettos can damage a wooden floor.

Answer:

- 14** A swimming pool is 10 m long, 5 m wide and 2 m deep and is full of water. Water has density 1000 kg/m³. Work out the mass of the water in tonnes.

Answer: