

Examples

Workout



Click here



Scan here

Question 1: Work out the density of each of the following.  
State the units of each answer.

- (a) A piece of wood has a mass of 7g and a volume of  $10\text{cm}^3$
- (b) A rod of aluminium has a mass of 575.4g and a volume of  $210\text{cm}^3$
- (c) A piece of nickel has a mass of 3.48kg and a volume of  $400\text{cm}^3$
- (d) An iron statue with volume of  $0.05\text{m}^3$  and a mass of 394kg
- (e)  $2.1\text{m}^3$  of oil with a mass of 1775kg

Question 2: Work out the mass of each of the following.  
State the units of each answer.

- (a) A statue with a volume of  $120\text{cm}^3$  made from ceramic which has a density of  $2\text{g/cm}^3$ .
- (b) A rod with a volume of  $50\text{cm}^3$  made from copper which has a density of  $8.9\text{g/cm}^3$ .
- (c) A block with a volume of  $1.8\text{m}^3$  made from silver which has a density of  $10490\text{kg/m}^3$
- (d) A statue with a volume of  $3\text{m}^3$  made from zinc which has a density of  $7.14\text{g/cm}^3$
- (e)  $2800\text{cm}^3$  of butter which has a density of  $911\text{kg/m}^3$

Question 3: Work out the volume of each of the following.  
State the units of each answer.

- (a) A 50g piece of wood which has a density of  $0.4\text{g/cm}^3$
- (b) A 770g block made of brass which has a density of  $8.67\text{g/cm}^3$
- (c) A 4kg sheet of glass which has a density of  $2.42\text{g/cm}^3$
- (d) 80kg of rye which has a density of  $720\text{kg/m}^3$
- (e) 5 tonnes of gold which has a density of  $19300\text{kg/m}^3$

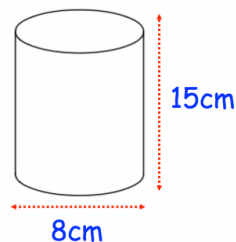
## Apply

Question 1: A cube of ice has side length of 5cm.  
The mass of the cube of ice is 114.5g.

Find the density of ice.  
Give your answer in  $\text{g/cm}^3$

Question 2: Shown is a solid cylinder made from carbon.  
The density of carbon is  $1.95\text{g/cm}^3$

Find the mass of the cylinder.



Question 3: The mass of  $4\text{m}^3$  of silver is 41960kg.  
The density of gold is  $19300\text{kg/m}^3$ .

Calculate the difference in mass between  $5\text{m}^3$  of silver and  $5\text{m}^3$  of gold.

Question 4: Beverley is building a toy boat.  
If wood has a density under  $1\text{g/cm}^3$ , it will float.  
She has a choice of three different pieces of wood.

Piece 1: volume =  $400\text{cm}^3$  and mass = 450g.

Piece 2: volume =  $0.02\text{m}^3$  and mass = 8kg

Piece 3: volume =  $1000\text{cm}^3$  and mass = 1.03kg

Which piece of wood is the most suitable?

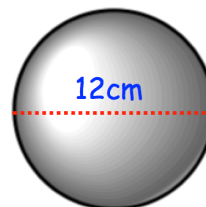
Question 5: Material A has a density of  $4.5\text{g/cm}^3$ .  
Material B has a density of  $14\text{g/cm}^3$ .

5kg of Material A and 200g of Material B form Material C.

Work out the density of Material C.

Question 6: A solid sphere has a diameter of 12cm.  
The sphere is made from glass.  
The density of the glass is  $3.02\text{g/cm}^3$

Find the mass of the glass sphere.



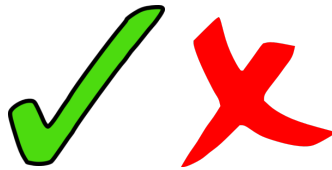
## Density

Video 384 on [www.corbettmaths.com](http://www.corbettmaths.com)

Question 7: An object has a mass of 420kg, correct to two significant figures.  
The density of the material it is made from is  $5.4\text{g/cm}^3$ , correct to one decimal place.

Work out the smallest possible volume of the object.  
Give your answer to three significant figures.

Answers



Click here



Scan here