Name:

Exam Style Questions

Density

Corbettmaths

Ensure you have: Pencil, pen, ruler, protractor, pair of compasses and eraser

You may use tracing paper if needed

Guidance

1. Read each question carefully before you begin answering it.
2. Don't spend too long on one question.
3. Attempt every question.
4. Check your answers seem right.
5. Always show your workings
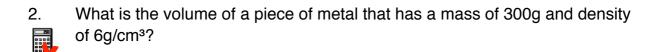
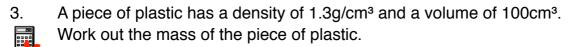Revision for this topic

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Video 384

1. A piece of wood has a mass of 8g and a volume of 10cm³.
   Work out the density of the wood.

   ………………..g/cm³
   (2)

2. What is the volume of a piece of metal that has a mass of 300g and density of 6g/cm³?

   ………………..cm³
   (2)

3. A piece of plastic has a density of 1.3g/cm³ and a volume of 100cm³.
   Work out the mass of the piece of plastic.

   ………………..g
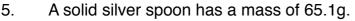   **(2)**

4. Iron has a density of 7.8g/cm³.
   A solid iron statue has a mass of 877.5g.
   Work out the volume of the statue.

   ………………..cm³
   (2)

5. A solid silver spoon has a mass of 65.1g.
    The volume of the spoon is 6.2cm³.
    Calculate the density of silver.

    ………………..g/cm³

    (2)

6. A glass cube of side length 5cm has a mass of 306.25g.
    Calculate the density of the glass.

    ………………..g/cm³

    (3)

7. A liquid has mass of 10kg and a density of 1.18g/cm³.
    Calculate the volume of the liquid.
    Include suitable units.

    …………………….

    (3)

8. A garden ornament has a volume of 0.05m³.
    The ornament is made from a stone that has a density of 6.4g/cm³.
    Calculate the mass of the ornament.
    Include suitable units.

    …………………….

    (3)

9. The mass of 3m³ of tin is 21840kg.
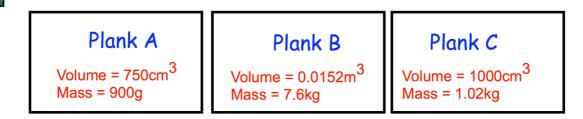
(a) Work out the density of tin.

………………..kg/m³

(2)

The density of aluminium is 2712kg/m³.

(b) Work out the difference in mass between 5m³ of tin and 5m³ of aluminium.

………………..kg

(3)

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10. Mr.Dixon is building a toy boat for his son.
He has three different planks of wood to choose from.

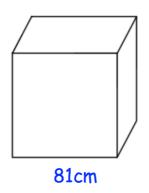| **Plank A**	**Plank B**	**Plank C**
Volume = 750cm³ Mass = 900g	Volume = 0.0152m³ Mass = 7.6kg	Volume = 1000cm³ Mass = 1.02kg

If wood has a density under 1g/cm³, it will float.

Which plank of wood is the most suitable?
Explain your answer.

Plank ………………..

(4)

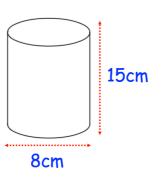11. The diagram below shows a solid block of ice.

A block of ice weighs ½ tonne.
The block is a cube with side length 81cm.

Find the density of the ice.
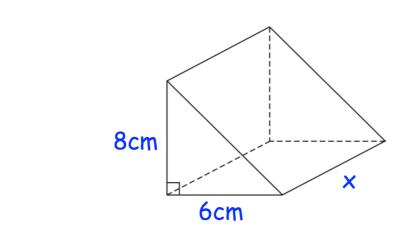Give your answer in kilograms per cubic metre.

....................kg/m³

(3)

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12. The diagram shows a solid cylinder.

15cm

8cm

The cylinder is made from titanium.
The density of titanium is 4.43g/cm³

Calculate the mass of the cylinder.

....................g

(3)

13. The diagram shows a solid triangular prism.

8cm

6cm

x

The prism is made from wood and has a mass of 643.8g
The density of wood is 1.85g/cm³

Calculate the length of the prism.

………………..cm

(4)

14. Material A has a density of 5.8g/cm³.
Material B has a density of 4.1g/cm³.

377g of Material A and 1.64kg of Material B form Material C.

Work out the density of Material C.

………………..g/cm³

(4)

15. The diagram shows a solid glass paperweight.

6cm

The paperweight is a hemisphere with diameter 6cm.
The glass has a density of 3g/cm³.

Calculate the mass of the paperweight.
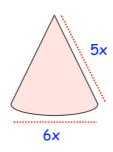
………………..g

(4)

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16. A solid metal sphere has a radius of 4cm, correct to the nearest centimetre.
Mass of the sphere is 720g, correct to two significant figures.

Work out the greatest possible density of the metal.
Give your answer to three significant figures.

………………..g/cm³

(4)

17.   The diagram below shows a solid cone.

The cone is made from a material with density 5g/cm³.

Write an expression for the mass of the cone, in terms of x.

..................g

(4)