

Name: _____ Date: _____

Density Word Problems

Solve each of the problems below. Show all work, including writing (and rewriting) the density formula and plugging in the numbers appropriately. Your answers should include units. Extra relevant information is included at the bottom of the page.

1. What is the density of an object with a mass of 120 g and a volume of 7mL?
2. What is the volume of 220 g of an object with a density of 55 g/cm³?
3. We have an object with a density of 620 g/cm³ and a volume of 75cm³. What is the mass of this object?
4. What would be the mass of #3 in kilograms?
5. A block of wood has a mass of 180 g. It is 10.0 cm long, 6.0 cm wide, and 4.0 cm thick. What is its volume and density?
6. A 500 g piece of metal has a volume of 2.75 cm³. What is its density?
7. Find the volume of 20.0 g of benzene.
8. Find the mass of ether which can be put into a beaker holding 130 mL.
9. Find the volume of 10 g of gasoline.
10. A cube measures 3.0 cm on each side and has a mass of 25 g. What is the density of the cube?
11. Will the cube in #10 float in water? Will it float in benzene?
12. An irregularly shaped stone was lowered into a graduated cylinder holding a volume of water equal to 20.0 mL. The height of the water rose to 30.2 mL. If the mass of the stone was 25.0 g, what was its density?
13. A solid object listed below has a volume of 10.0 cm³. It has a mass of 86 g. What is its density? What material is the object?

Facts to Know:

$$D = m/V$$

$$1 \text{ mL} = 1 \text{ cm}^3$$

Common Densities:

Water 1.00 g/mL

Benzene 0.88 g/mL

Gasoline 0.70 g/mL

Ether 0.71 g/mL

Brass 8.6 g/cm³

Copper 8.9 g/cm³