**DENSITY PRACTICE PROBLEMS**

1. At 20 °C, a sample of copper occupying a volume of 8.50 cm**3** has a mass of 75.6 grams. What is the density of the copper?

2. At 20 °C, the density of uranium is 18.9 g/cm**3**. What would be the volume of a piece of uranium having a mass of 58 g?

3. At 20 °C, the density of silver is 10.5 g/cm**3**. What mass of silver would occupy a volume of 24 cm**3**?

4. The density of tin is 5.75 g/cm**3**. How many cubic decimeters does 17.2 kg of Sn occupy?

5. The density of silver is 10.5 g/cm**3**. What is the mass of .987 dm**3** of silver?

6. Copper has a density of 8.92 g/cm**3**. How many milliliters of water would be displaced if 46 kg of copper granules were poured into a barrel filled with water?

7. What is the mass of 4.2 kg of gold when it is transferred to a planet having twice the gravity of earth?

8. A chain bracelet is found. It looks as though it might be made of either gold or of copper. When the bracelet is submerged in a graduated cylinder containing water, the volume of the water rises from 9.2 cm**3** to 11.7 cm**3**. The bracelet has a mass of 45 g. Is the bracelet made of gold or copper? (Note: The density of gold is 19.3 g/cm**3** and the density of copper is 8.92 g/cm**3**.)

9. An object whose density is 1.98 x 10**3** kg/m**3** has a mass of 35.4 g. How many cubic centimeters does it occupy?

10. Calculate the mass, in kilograms, of an object that occupies .253 dm**3** and that has a density of 4.14 g/cm**3**.

**DENSITY PRACTICE PROBLEMS - Answers**

1. At 20 °C, a sample of copper occupying a volume of 8.50 cm**3** has a mass of 75.6 grams. What is the density of the copper?

D = 75.6 g

8.50 cm**3** D = 8.89 g / cm**3**

2. At 20 °C, the density of uranium is 18.9 g/cm**3**. What would be the volume of a piece of uranium having a mass of 58 g?

18.9 g / cm**3** = 58 g

V V = 3.07 cm**3**

3. At 20 °C, the density of silver is 10.5 g/cm**3**. What mass of silver would occupy a volume of 24 cm**3**?

10.5 g / cm**3** = Mass

24 cm**3** M = 252 g

4. The density of tin is 5.75 g/cm**3**. How many cubic decimeters does 17.2 kg of Sn occupy?

5.75 g / cm**3** = 17.2 kg 1000 g

1 kg V = 2991.30 cm**3**

V

2991.30 cm**3** (1)**3** dm**3**

= 2.99 dm**3**

(10)**3** cm**3**

5. The density of silver is 10.5 g/cm**3**. What is the mass of .987 dm**3** of silver?

10.5 g / cm**3** = M

.987 dm**3** (10)**3** cm**3**

(1)**3** dm**3**

M = 10,363.5 g

6. Copper has a density of 8.92 g/cm**3**. How many milliliters of water would be displaced if 46 kg of copper granules were poured into a barrel filled with water?

8.92 g / cm**3** = 46,000 g

V = 5156.95 cm**3**

V

5156.95 cm**3** 1 mL

= 5156.95 mL

1 cm**3**

7. What is the mass of 4.2 kg of gold when it is transferred to a planet having twice the gravity of earth?

The mass would still be 4.2 kg. The mass of an object is not affected by gravity.

8. A chain bracelet is found. It looks as though it might be made of either gold or of copper. When the bracelet is submerged in a graduated cylinder containing water, the volume of the water rises from 9.2 cm**3** to 11.7 cm**3**. The bracelet has a mass of 45 g. Is the bracelet made of gold or copper? (Note: The density of gold is 19.3 g/cm**3** and the density of copper is 8.92 g/cm**3**.)

Note: Density of Copper = 8.92 g / cm**3**

Density of Gold = 19.3 g / cm**3**

D = 45 g

D = 18 g / cm**3**

2.5 mL

The bracelet is more likely made of gold than of copper.

9. An object whose density is 1.98 x 10**3** kg/m**3** has a mass of 35.4 g. How many cubic centimeters does it occupy?

1.98 x 10**3** kg 1000 g 1 m**3**

= 1.98 g / cm**3**

m**3** 1 kg (100)**3** cm**3**

1.98 g / cm**3** = 35.4 g

V = 17.88 cm**3**

V

10. Calculate the mass, in kilograms, of an object that occupies .253 dm**3** and that has a density of 4.14 g/cm**3**.

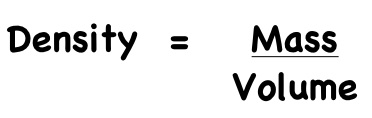
4.14 g / cm**3** = M

.253 dm**3** (10)**3** cm**3**

(1)**3** dm**3**

M = 1047.42 g or 1.05 kg

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Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date \_\_\_\_\_\_\_\_\_\_\_\_\_

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