Density Problems

Solve the following problems using the GRASSS method.

1. Calculate the mass of a liquid with a density of 3.2 g/mL and a volume of 25.0 mL.

2. Calculate the density of a 500.0 g rectangular block with the following dimensions: length=8.0 cm, width=6.0 cm, height=5.0 cm.

3. Calculate the mass of a solid metal cylinder with a density of 2.6 g/cm³, a diameter of 1.8 cm, and a length of 4.0 cm.

- 4. An irregular object with a mass of 18.0 kg displaces 2.5 L of water when placed in a large overflow container. Calculate the density of the object.
- 5. A graduated cylinder has a mass of 80.0 g when empty. When 20.0 mL of water is added, the graduated cylinder has a mass of 100.0 g. If a stone is added to the graduated cylinder, the water level rises to 45.0 mL and the total mass is now 156.0 g. What is the density of the stone?