

Name: \_\_\_\_\_  
Period: \_\_\_\_

## Density

$$D = \frac{m}{V} \quad V = \frac{m}{D} \quad m = D \times V$$

- (1) Calculate the density of a metal having a mass of 108 g and a volume of 15 cm<sup>3</sup>.
- (2) Calculate the mass of 300 mL of water (density 1.00 g/mL).
- (3) Calculate the volume of a silver ring (density 10.50 g/cm<sup>3</sup>) with a mass of 30 g.
- (4) A block of lead measures 2.0 cm by 6.0 cm by 8.0 cm.
- (a) What is the volume of the block?
  - (b) What is the density of lead?
  - (c) What is the mass of the block in g? In kg?
- (5) (a) What is the density of iron?  
(b) What volume will 300 g of iron occupy?
- (6) A ring weighing 50 g is placed in a graduated cylinder. The water in the graduated cylinder rises from 10.0 mL to 12.6 mL.
- (a) What is the volume of the ring in mL? In cm<sup>3</sup>?
  - (b) What is the density of the ring?
  - (c) What metal is the ring composed of?
- (7) An empty beaker weighs 200 g. When the beaker is filled with ethanol it weighs 420 g.
- (a) What is the mass of the ethanol?
  - (b) What is the density of ethanol?
  - (c) What is the volume of the ethanol in cm<sup>3</sup>? In mL? In L?

### Answers:

- (1) 7.2 g/cm<sup>3</sup>      (4) (a) 96 cm<sup>3</sup>      (5) (a) 7.86 g/cm<sup>3</sup>      (6) (a) 2.6 mL; 2.6 cm<sup>3</sup>      (7) (a) 220 g  
(2) 300 g      (b) 11.34 g/cm<sup>3</sup>      (b) 38.2 cm<sup>3</sup>      (b) 19 g/cm<sup>3</sup>      (b) 0.80 g/cm<sup>3</sup>  
(3) 2.9 cm<sup>3</sup>      (c) 1.1x10<sup>3</sup> g; 1.1 kg      (c) gold      (c) 275 cm<sup>3</sup>; 275 mL; 0.275 L