**Density Practice Problems**

Density is the amount of mass per unit volume of a given object. It can be calculated using the following equation.

**d=m/v**

For the problems below, show all work and box your final answers.

1. A platinum bar measures 5.0 cm long, 4.0 cm wide, and 1.5 cm thick. It has a mass of 700.0 grams.
   1. Calculate the volume of the platinum bar.
   2. Calculate the density of the platinum bar.
2. A lead cylinder has a mass of 540 grams and a density of 2.70 g/ml. Calculate the volume of the lead cylinder.
3. A cork has a mass of 3 grams and a volume of 16 cm3. Calculate the density.
4. A thin glass bottle holds 25 ml of liquid and has a mass of 19 grams. Calculate the density.
5. A bar of soap is 12 cm tall, 6 cm wide, and 10 cm long. It has a mass of 415 grams. What is the density of the bar of soap?
6. A sheet of metal is 2 mm wide, 10 cm tall and 15 cm long. It was 4 grams. What is the density?

1. Mercury metal is poured into a graduated cylinder that holds exactly 22.5 mL. The mercury used to fill the cylinder weighs 306.0 g. From this information, calculate the density of mercury.

8. What is the mass of the ethyl alcohol that exactly fills a 200.0 mL container? The density of ethyl alcohol is 0.789 g/mL.

9. A rectangular block of copper metal weighs 1896 g. The dimensions of the block are 8.4 cm by 5.5 cm by 4.6 cm. From this data, what is the density of copper?

10. A flask that weighs 345.8 g is filled with 225 mL of carbon tetrachloride. The mass of the flask and carbon tetrachloride is found to be 703.55 g. From this information, calculate the density of carbon tetrachloride.

11. A block of lead has dimensions of 4.50 cm by 5.20 cm by 6.00 cm. The block weighs 1591 g. From this information, calculate the density of lead.

12. 28.5 g of iron shot is added to a graduated cylinder containing 45.5 mL of water. The water level rises to the 49.1 mL mark, From this information, calculate the density of iron.