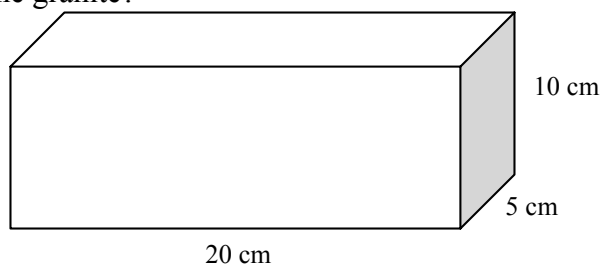


## SCIENCE 8 – DENSITY CALCULATIONS WORKSHEET

NAME: \_\_\_\_\_

- 1) A student measures the mass of an  $8 \text{ cm}^3$  block of brown sugar to be 12.9 g. What is the density of the brown sugar?
- 2) A chef fills a 50 mL container with 43.5 g of cooking oil. What is the density of the oil?
- 3) Calculate the mass of a liquid with a density of 2.5 g/mL and a volume of 15 mL.
- 4) Calculate the volume of a liquid with a density of 5.45 g/mL and a mass of 65 g.
- 5) A machine shop worker records the mass of an aluminum cube as 176 g. If one side of the cube measures 4 cm, what is the density of the aluminum?
- 6) A teacher performing a demonstration finds that a piece of cork displaces 23.5 mL of water. The piece of cork has a mass of 5.7 g. What is the density of the cork?

- 7) A carver begins work on the following block of granite that weighs 2700 g. What is the density of the granite?



- 8) A piece of PVC plumbing pipe displaces 60 mL when placed into a container of water. If the pipe has a mass of 78 g, what is the density of PVC?
- 9) A solid magnesium flare has a mass of 1300 g and a volume of  $743 \text{ cm}^3$ . What is the density of the magnesium?

10) A graduated cylinder has a mass of 50 g when empty. When 30 mL of water is added, the graduated cylinder has a mass of 120 g. If a rock is added to the graduated cylinder, the water level rises to 75 mL and the total mass is now 250 g. What is the density of the rock?

11) A student performs an experiment with three unknown fluids and obtains the following measurements:

Fluid A:  $m = 2060 \text{ g}$ ,  $V = 2000 \text{ mL}$

Fluid B:  $m = 672 \text{ g}$ ,  $V = 850 \text{ mL}$

Fluid C:  $m = 990 \text{ g}$ ,  $V = 1100 \text{ mL}$

Draw how the fluids would be layered if they were combined in a beaker.



12) Use your density skills to find the identity of the following mystery objects.

Table of Densities			
Solids	Density $\text{g/cm}^3$	Solids	Density $\text{g/cm}^3$
Marble	2.56	Copper	8.92
Quartz	2.64	Gold	19.32
Diamond	3.52	Platinum	21.4



While digging in the backyard, you find an old coin. Its mass is 26.76 g and its volume is 3 cm.



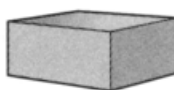
You think you have found a diamond. Its mass is 5.28 g and its volume is 2  $\text{cm}^3$ .

What is the coin made of? \_\_\_\_\_

What did you find? \_\_\_\_\_



You find a ring with a mass of 107 g. You fill a graduated cylinder up with 10 mL of water and put the ring into the cylinder. The water rises up to the 15 mL mark.



There is a block on your desk that acts as a paperweight. Its measurements are 3 cm by 4 cm by 6 cm. The block has a mass of 184.32 g.

What is the ring made of? \_\_\_\_\_

What is the block made of? \_\_\_\_\_