**Unit 4 Density Worksheet NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. A student measures the mass of an 8 cm3 block of brown sugar to be 12.9 g. What is the density of the brown sugar?

1. A chef fills a 50 mL container with 43.5 g of cooking oil. What is the density of the oil?

1. Calculate the mass of a liquid with a density of 2.5 g/mL and a volume of 15 mL.

1. Calculate the volume of a liquid with a density of 5.45 g/mL and a mass of 65 g.

1. 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?

1. 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?

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

20

 cm

10

 cm

 5 cm

1. 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?

1. A solid magnesium flare has a mass of 1300 g and a volume of 743 cm3. What is the density of the magnesium?

1. 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?

1. A student performs an experiment with three unknown fluids and obtains the following measurements:



Fluid A: *m* = 2060 g, V = 2000 mL

Fluid B: *m* = 672 g, V = 850 mL

Fluid C: *m* = 990 g, V = 1100 mL

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

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

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|  | **Table of Densities**  |  |
| **Solids**  | **Density g/cm3**  | **Solids**  | **Density g/cm3**  |
| Marble  | 2.56  | Copper  | 8.92  |
| Quartz  | 2.64  | Gold  | 19.32  |
| Diamond  | 3.52  | Platinum  | 21.4  |

You think you have found a diamond. Its mass is 5.28 g and its volume is 2 cm3.



While digging in the backyard, you find an old coin. Its mass is 26.76 g and its volume is 3cm3.



|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   What is the coin made of?  |   |  |   |  What did you find?  |

|  |  |
| --- | --- |
| You find a ring with a mass of  | There is a block on your desk that  |

107 g. You fill a graduated cylinder acts as a paperweight. Its up with 10 mL of water and put the measurements are 3 cm by 4 cm by ring into the cylinder. The water 6 cm. The block has a mass of

|  |  |  |
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| rises up to the 15 mL mark.   What is the ring made of?  |   | 184.32 g.   What is the block made of?  |