Lesson 10.5 Assignment   Name:_____

Complete.

1) When you put a rock into a container of water, it raises the water level 3 cm. If the container is a rectangular prism whose base measures 15 cm by 15 cm, what is the volume of the rock?

2) You drop a solid glass ball into a cylinder with a radius of 6 cm, raising the water level 1 cm. What is the volume of the glass ball?

3) A fish tank 10 by 14 by 12 inches high is the home of a large goldfish named Columbia. She is taken out when her owner cleans the tank, and the water level in the tank drops $\frac{1}{3}$ inch. What is Columbia's volume?

Refer to the table.

Metal	Density	Metal	Density
Aluminum	2.81 g/cm³	Nickel	8.89 g/cm³
Copper	8.97 g/cm³	Platinum	21.40 g/cm³
Gold	19.30 g/cm³	Potassium	0.86 g/cm³
Lead	11.30 g/cm³	Silver	10.50 g/cm³
Lithium	0.54 g/cm³	Sodium	0.97 g/cm³

4) What is the mass of a solid block of aluminum if its dimensions are 4 cm by 8 cm by 20 cm?

5) Which has more mass: a solid cylinder of gold with a height of 5 cm and a diameter of 6 cm or a solid cone of platinum with a height of 21 cm and a diameter of 8 cm?

6) Chemist Dean Dalton is given a clump of metal and is told that it is sodium. He finds that the metal has mass 145.5 g. He places it into a nonreactive liquid in a square prism whose base measures 10 cm on each edge. If the metal is indeed sodium, how high should the liquid level rise?

7) A square prism container with a base 5 cm by 5 cm is partially filled with water. You drop a clump of metal with mas 525 g into the container, and the water level rises 2 cm. What is the density of the metal? Identify the metal.

8) Sherlock Holmes rushes home to his chemistry lab, takes a mysterious medallion from his case, and weighs it. "It has mass 3088 grams. Now let's check its volume." He pours water into a graduated glass container with a 10-by-10 cm square base, and records the water level, which is 53.0 cm. He places the medallion into the container and reads the new water level, 54.6 cm. He enjoys a few minutes of mental calculation, then turns to Dr. Watson. "This confirms my theory. Quick, Watson! Off to the train station." "Holmes, you amaze me. Is it gold?" questions the good doctor. "If it has a density of 19.3 grams per cubic centimeter, it is gold," smiles Mr. Holmes. "If it is gold, then Colonel Banderson is who he says he is. If it is a fake, then so is the Colonel." "Well?" Watson queries. Holmes smiles and says, "It's elementary, my dear Watson. Elementary geometry, that is." What is the volume of the medallion? Is it gold? Is Colonel Banderson who he says he is?