

Name: _____

Date: _____

More Practice Problems: Density, Mass, and Volume

For the following problems, write the equation that you are using, show all of your work, and box your answers.

1. Rock 1 has a volume of 15cm^3 and a mass of 45 g. What is its density?

2. Rock 2 has a volume of 30cm^3 and a mass of 60g. What is its density?

3. Which rock is heavier? Which is lighter? Why?

4. Which rock is more dense? Which is less dense? Why?

5. You decide you want to carry a boulder home from the beach. It is 30 centimeters on each side, and so has a volume of $27,000 \text{ cm}^3$. It is made of granite, which has a typical density of 2.8 g/cm^3 . What is the mass of the boulder?
6. Rocks are sometimes used along coasts to prevent erosion. If a rock needs to weigh 2,000 kilograms (about 2 tons) in order not to be shifted by waves, how big (what volume) does it need to be? You are using basalt, which has a typical density of 3200 kg/m^3
7. CaCl_2 (calcium chloride) is used as a de-icer on roads in the winter. It has a density of 2.50 g/cm^3 . What is the mass of 5.0 L this substance?
Hint- Convert the volume to mL first.

Convert your answer to kg.

8. The average apple has a mass of 100 g. One apple has a volume of about 156 cm^3 . Find the density of an apple.

9. The density of paper is 1.20 g/cm^3 . What is the mass of the paper in a notebook that is 70 mm thick, 216 mm wide and 280 mm long?

You need to convert the mm measurements to cm before you solve the problem.

10. You get lost and wander into the same store where the gold bar was offered to you before. Now the storekeeper says he has an even better deal for you! He shows you a silvery, solid, rectangular block that he tells you is solid platinum. He says that he is willing to part with the block for \$750.

The dimensions of the block are 5 cm by 4 cm by 1.5 cm. The block weighs 249 g.

Luckily, you still have your trusty textbook and find the density of platinum listed as 21.46 g/cm^3 .

What would you tell the shopkeeper? Is this a good deal? Why or why not? **Show your work! Use the back if you need to.**

If not, tell him what the weight of the block should be if it was pure platinum.