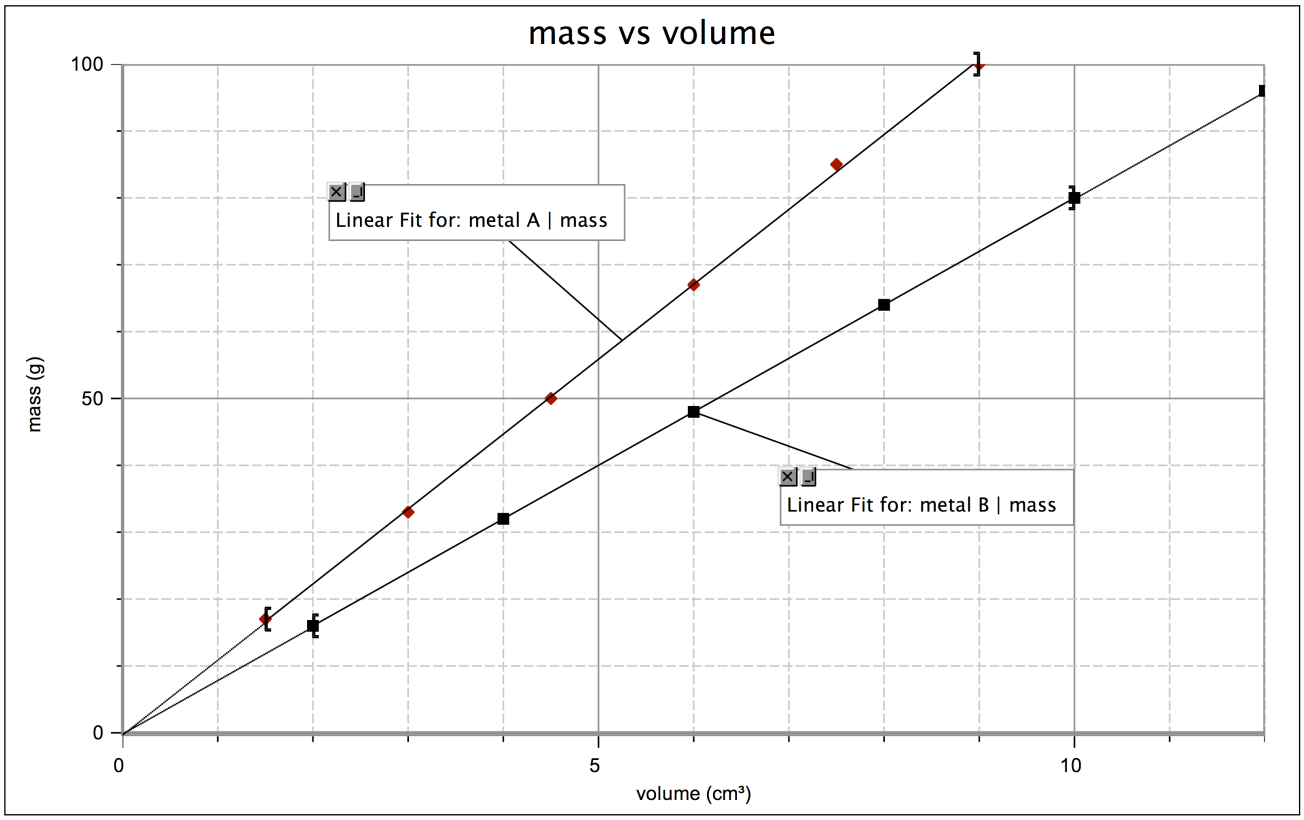
Name_____

Date_____ Pd____

Unit 1 Worksheet 4 – Applied density problems



1. Determine the density of each metal. Show all your work and include appropriate units.

2. From the graph, estimate
   a. the mass of 8.0 cm^3 of metal A. _____

   b. the volume of 70 g of metal B. _____

   c. mark on the graph how you found the answers above.

3. Use the density of B as a factor to determine the answer to 2b. Show the set-up including how the units cancel.

4. Ethanol has a density of 0.789 g/cm^3.
   a. What is the mass of 225 cm^3 of ethanol?

   b. What is the volume of 75.0 g of ethanol?

5. What is the density of water in g/mL? What does that mean?

6. The cup is a volume widely used by cooks in the U.S. One cup is equivalent to 237 cm^3. One cup of olive oil has a mass of 216 g; what is the density of olive oil?

7. What would you expect to happen if the cup of olive oil in question 6 is poured into a container of ethanol? Why?

Gold has a density of 19.3 g/ cm^3. A cube of gold measures 4.23 cm on each edge:

8. What is the volume of the cube?

9. What is its mass? How many significant figures should you include in your answer and why?

10. A standard backpack is approximately 30cm x 30cm x 40cm. Suppose you find a hoard of pure gold while treasure hunting in the wilderness. How much mass would your backpack hold if you filled it with the gold? An average student has a mass of 70 kg. How do these values compare?