Applied Density Practice

EHS CA3MIs+ry

Mr. Genest

Name _____

Date _____

HINTS

Tutors! Adults! Help this young chemist by visiting **http:genest.weebly.com** with any smart phone

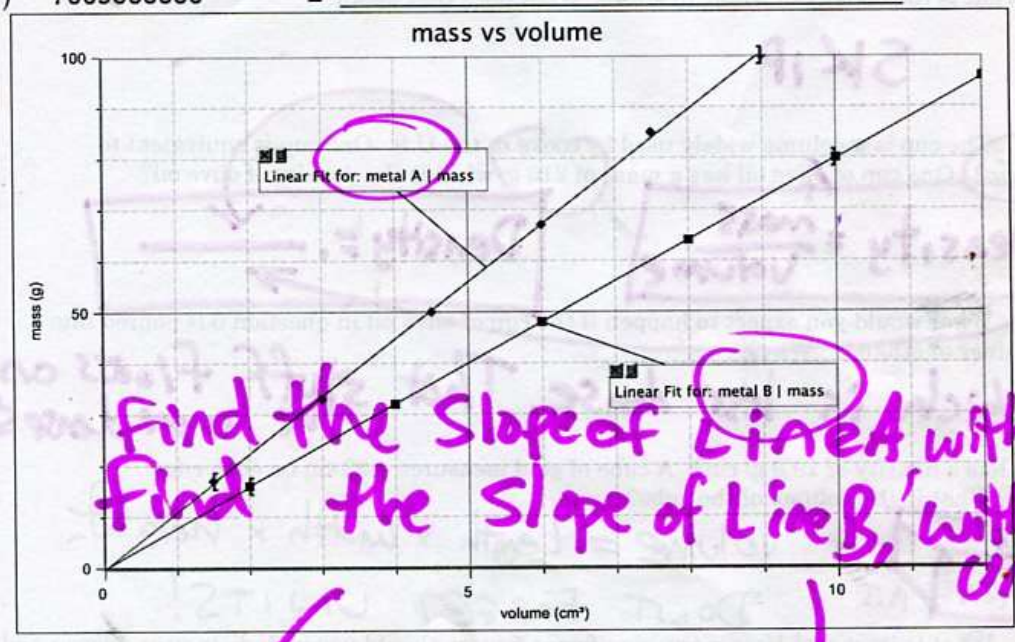
Write each number in scientific notation.

11) 529000000 = _____

12) 5.29 = _____

13) 982.05 = _____

14) 7009000000 = _____



Find the Slope of LineA with units

Find the Slope of LineB, with units.

1. Determine the density of each metal (hint: density is just the slope of grams per mL). Show all your work and include appropriate units.

LineA slope = ?

LineB slope = ?

2. From the graph, estimate

a. the mass of 8.0 cm^3 of metal A. _____ touch line A at 8.0cm3. Read the grams.

b. the volume of 70 g of metal B. _____ touch line B at 70g. Read the cm3

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.

use slope of B with unit

70 grams x ( ) =

4. Ethanol has a density of 0.789 g/cm³.
   a. What is the mass of 225 cm³ of ethanol?

225 cm³ x (g / cm³) =

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

75.0 g x (cm³ / g) =

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

SKIP

6. The cup is a volume widely used by cooks in the U.S. One cup is equivalent to 237 cm³. One cup of olive oil has a mass of 216 g; what is the density of olive oil?

Density = mass / volume

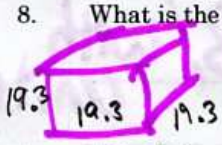
Density = ____

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

Find which is less dense. That stuff floats on the more dense stuff.

Gold has a density of 19.3 g/ cm³. A cube of gold measures 4.23 cm on each edge:

8. What is the volume of the cube?



Volume = Length x width x height

DON'T FORGET UNITS!

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?