

Name:

CALVIN

Date:

Hour:

Showing work

Follow these steps to show work:

- 1) LIST GIVEN
- 2) SOLVE EQUATION FOR UNKNOWN (hint: use arrow method and circle unknown)
- 3) PLUG AND CHUG
- 4) EVALUATE and BOX in your answer

Practice:

Suppose you find a meteorite on your walk on the beach. Find the density of the meteorite if it has a mass of 125.03 g and a volume of 25.4 mL. (SHOW WORK! UNITS! SIG DIGS!)

$$\begin{aligned} D &= ? \\ M &= 125.03 \text{ g} \\ V &= 25.4 \text{ mL} \end{aligned}$$
$$\textcircled{D} = \frac{M}{V} = \frac{(125.03 \text{ g})}{(25.4 \text{ mL})} = \boxed{4.92 \text{ g/mL}}$$

Try it:

- 1) A piece of wood has a density of 0.789 g/mL and a volume of 55.0 mL. Find its mass. (SHOW WORK! UNITS! SIG DIGS!)

$$\begin{aligned} D &= 0.789 \text{ g/mL} \\ V &= 55.0 \text{ mL} \\ M &= ? \end{aligned}$$
$$\textcircled{M} = D \cdot V = (0.789 \frac{\text{g}}{\text{mL}})(55.0 \text{ mL}) = \boxed{43.4 \text{ g}}$$

- 2) Suppose an object has a density of 2.70 g/cm<sup>3</sup> and a mass of 25.00g. Find the volume. (SHOW WORK! UNITS! SIG DIGS!)

$$\begin{aligned} D &= 2.70 \frac{\text{g}}{\text{cm}^3} \\ M &= 25.00 \text{ g} \\ V &= ? \end{aligned}$$
$$\textcircled{V} = \frac{M}{D} = \frac{(25.00 \text{ g})}{(2.70 \frac{\text{g}}{\text{cm}^3})} = \boxed{9.26 \text{ cm}^3}$$

Gold, Hg, <sup>Pb</sup> ~~Q~~, Cu, Quartz, Cork, H

3) Arrange the following in order of decreasing density:  
Quartz, Cork, Lead, Water, Mercury, Copper, Hydrogen, Gold

2.65 0.25 11.35 1.0 13.55 8.96 0.00008988 19.6

4) Describe **how** to convert between Celsius and Kelvin temperature scales.

$^{\circ}\text{C} \rightarrow \text{K}$  Add 273

5) a) Give **TWO** advantages of the S.I. system.

Reasonable ...

b) Give **TWO** reasons why has the United States not fully switched to S.I. system?

Reasonable ...

6) Give **FOUR** examples where the S.I. system is used in the United States.

Reasonable ...

7) List conversion factors:

1 inch = 2.54 cm

1 gallon = 3.79 L

1 pound = 454 g

1 mile = 1.61 Km

### BONUS

Use factor label to determine how many minutes YOU have been alive. Give your answer in scientific notation and SIG DIGS. Show WORK!

$$\frac{15 \text{ y}}{1 \text{ y}} \cdot \frac{365 \text{ d}}{1 \text{ d}} \cdot \frac{24 \text{ h}}{1 \text{ d}} \cdot \frac{60 \text{ min}}{1 \text{ h}} = 7884000 \text{ min}$$

$7.9 \times 10^6 \text{ min}$

### QUIZ MONDAY

KHDodcm

Density problems.

Sig Digs

Metric conversions.

Factor label

S.I. prefixes.

Sig Digs

**\*\*Know how to show work, box in answer, include units.**

Bring your calculator if desired.

Go VIKINGS!!!