

Be sure to show all work, use the correct number of significant figures, circle final answers and use correct units in all problems.

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1. Calculate these expressions. Include the correct number of significant figures and units in the answer. (4 points)

$$(9.994 \text{ g} - 8.33 \text{ g}) / (1.44 \text{ cm}^3 - 0.536 \text{ cm}^3) \quad \underline{\hspace{2cm}}$$

$$(9.16 * 10^{+3} \text{ mL}) * (2.3411 * 10^{-6} \text{ g}) / 12.001 * 10^{-3} \text{ g} \quad \underline{\hspace{2cm}}$$

2. Convert 892.0 °C to °F. (4 points)

3. Density Problem (8 points)

a. Calculate the density of “substance A” when its mass = 11.22 g and its volume is 0.244 cm<sup>3</sup>. Express the density in units of g / mm<sup>3</sup>.

b. It costs 10.79 cents to make 11.4 cm<sup>3</sup> of “substance A”. Calculate how much it would cost to make 8.91 pounds of “substance A” in units of \$. (1 pound = 453.59237 g; 100 cents = 1 \$)

4. Differentiate between chemical and physical properties. Give at least one example of each. (4 points)