

CH 151 Quiz #1 Name: \_\_\_\_\_

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

Helpful hints: kilo =  $10^3$  milli =  $10^{-3}$  centi =  $10^{-2}$  273.15  $1 \text{ cm}^3 = 1 \text{ mL}$

ANSWERS appear in BOLD

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1. A bar of gold (density =  $19.3 \text{ g/cm}^3$ ) has a volume of 8.0 qt. What is the mass of the gold in pounds? (1 L = 1.06 qt; 454 g = 1 lb). (5 points)

$$8.0 \text{ qt} * (L / 1.06 \text{ qt}) * (10^3 \text{ mL/L}) * (\text{cm}^3/\text{mL}) * 19.3 \text{ g/cm}^3 * (\text{lb}/454 \text{ g}) = 3.2 * 10^2 \text{ lb}$$

2. Convert the following, and use the correct number of significant figures. Circle your final answers! (5 points)

317.0 seconds to hours:  $317.0 \text{ s} * (\text{min} / 60 \text{ s}) * (\text{hour} / 60 \text{ min}) = 0.0880556 \dots$  **0.08806 hours**

44.7 km to cm:  $44.7 \text{ km} * (1000 \text{ m} / \text{km}) * (100 \text{ cm} / \text{m}) = 4.47 \times 10^6 \text{ cm}$

47.0 mL to  $\text{cm}^3$ :  **$47.0 \text{ cm}^3$**  ( $1 \text{ mL} = 1 \text{ cm}^3$ )

3. Perform the following calculations. Report the answer to the correct number of significant digits. (5 points)

$17.89 \text{ cm} + 0.232 \text{ cm} + 32.2 \text{ cm}$  **50.3 cm**

$$\frac{(2.34 \times 10^3 \text{ cm})(4.2021 \times 10^{-6} \text{ cm})}{(8.7 \times 10^3 \text{ s})}$$
  **$1.1 * 10^{-6} \text{ cm}^2/\text{s}$**

$54.721 = 2.9 \times Q$  **Q = 19**

4. Convert the following quantities: (5 points) Watch sig figs!

**93 K to °C.**  $93 - 273 = -180. \text{ °C}$

**$1.17 \text{ g/cm}^3$  to  $\text{g/mm}^3$**   $1.17 \text{ g/cm}^3 * (1 \text{ cm} / 10 \text{ mm})^3 = 1.17 * 10^{-3} \text{ g/mm}^3$

**7.360 g to kg**  $7.360 \text{ g} * (1 \text{ kg} / 1000 \text{ g}) = 7.360 * 10^{-3} \text{ kg}$