

CHEMISTRY 116 - Fall 2021
 Dr. Audrey Dell Hammerich
Worksheet Week 1 - Chapters 1-2

1. Perform the following operations using the correct number of significant figures:

a) $11.99 + 0.250$ (10.95) b) $\frac{7.01600 - 6.941}{1.00088}$ c) $\frac{151.96 - 0.47820}{0.52180}$ (150.9196)

2. For the following data:

Volume	3.25 cm ³	6.22 cm ³	15.45 cm
Mass	14.2 g	26.7 g	66.5 g
Density			

Determine the density for each of the three sets of data, the average density of the data, and its standard deviation.

3. How many cubic millimeters of water are in 135 mL? [1.35 × 10⁵]

4. What is the mass of a cube of gold ($d = 19.32 \text{ g cm}^{-3}$) whose side is 0.55 in? (1 in = 2.54 cm) [53 g]

5. A 9.85 g piece of jewelry containing only silver and gold has a volume of 0.675 cm³. What is the mass % of gold in the jewelry? Densities of gold and silver are 19.3 g cm⁻³ and 10.5 g cm⁻³, respectively. [61.61]

6. If 36 g of water yields 4.0 g of hydrogen, how many kg of hydrogen can be obtained from 4.35 × 10⁴ mg of water? [4.8 × 10⁻³]

7. Complete the following table:

symbol	# of protons	# of neutrons	# of electrons	charge
	33	42		3+
¹²⁸ / ₅₂ Te ²⁻				
	16	16	16	
	81	123		1+
¹⁹⁵ / ₇₈ Pt				

