

Unit 1 Mastery

1. How many sig figs in the following numbers? Convert to scientific notation or write in regular notation. (1 point each)

A. 240 cm

C. 1.11×10^5

B. 32.103 g

D. 3.0030×10^{-4}

2. Calculate the following round your answer to proper sig figs. You may express in regular or scientific notation. (1 point each)

A. $4.223 + 5.19229$ C. $1.32 \times 10^5 + 7.2 \times 10^2$ B. $3.22 - 8.0$ D. $4.4389 \times 10^1 - 4.3389 \times 10^1$

3. Convert the following units

A. 5.44 cL to L

C. 88.900 J to uJ

B. 100.3 nm to Mm

D. 198.4 decades to days

4. Complete the Table

Atom Name (Hyphen Notation)	Atomic Number	Protons	Electrons	Neutrons	Mass Number	Nuclear Symbol
Barium - 137						
	33				75	
		17		18		

5. Using your knowledge of nuclear chemistry, write the equations for the following processes:

1) The alpha decay of iridium-174

2) The beta decay of platinum-199

6. Write the symbols for an alpha particle, beta particle, gamma ray, which has the largest mass?

7. If the half-life for the radioactive decay of zirconium-84 is 26 minutes and I start with a 175 gram sample, how much will be left over after 104 minutes?