

Name: _____ Date: _____

CHEMISTRY

Atomic Mass & Ions

Part 1: Determine the atomic mass of the elements using the isotopes and abundances.

1. Change the abundances from % to the decimal.
2. Calculate the sum-product of the atomic mass (nuclide number) and decimal abundance.

1. Chlorine has two abundant isotopes.

35-Cl = 76%

37-Cl = 24%

$$(\underline{\quad} \cdot \underline{\quad}) + (\underline{\quad} \cdot \underline{\quad}) = \underline{\quad} + \underline{\quad} = \underline{\quad} \text{ g/mol}$$

2. Sulfur has three abundant isotopes.

32-S = 95%

33-S = 0.8%

34-S = 4.2%

$$(\underline{\quad} \cdot \underline{\quad}) + (\underline{\quad} \cdot \underline{\quad}) + (\underline{\quad} \cdot \underline{\quad}) =$$

$$\underline{\quad} + \underline{\quad} + \underline{\quad} = \underline{\quad} \text{ g/mol}$$

3. Iron has four abundant isotopes.

54-Fe = 5.8%

56-Fe = 91.7%

57-Fe = 2.2%

58-Fe = 0.3%

$$(\underline{\quad} \cdot \underline{\quad}) + (\underline{\quad} \cdot \underline{\quad}) + (\underline{\quad} \cdot \underline{\quad}) + (\underline{\quad} \cdot \underline{\quad}) =$$

$$\underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad} = \underline{\quad} \text{ g/mol}$$

4. Strontium has four abundant isotopes.

84-Sr = 0.5%

86-Sr = 9.9%

87-Sr = 7.0%

88-Sr = 82.6%

$$(\text{ } \cdot \text{ }) + (\text{ } \cdot \text{ }) + (\text{ } \cdot \text{ }) + (\text{ } \cdot \text{ }) =$$

$$\text{ } + \text{ } + \text{ } + \text{ } = \text{ } \text{ g/mol}$$

Part 2: Ions. Determine if the atom is a cation or anion. Type **C** for cation. Type **A** for anion. Determine the number of protons, neutrons, and electrons in the atom by using the nuclide number and the charge. Protons have a +1 charge. Electrons have a -1 charge.

	Cation Or Anion?	Z	#P	#N	#e-
56-Fe ²⁺					
21-Na ⁺					
32-S ²⁻					
27-Al ³⁺					
35-Cl ⁻					
52-Mn ⁴⁺					
19-F ¹⁻					
230-Th ⁴⁺					
138-Ba ²⁺					
14-N ³⁻					