

In-Class Exercise I

Atomic Notation Practice

Atomic number (Z) is the number of the element from the periodic table. This number is equal to the number of *protons* in the nucleus of an atom of that element.

Mass number (A) is the mass of the element from the periodic table rounded to the nearest whole number. It represents the total number of protons and neutrons in the nucleus of an atom of that element.

The number of *neutrons* equals $A - Z$.

For a *neutral* atom of an element, the number of *electrons* equals the number of protons.

Complete the following table:

(The front of your book has a periodic table with names and symbols of the elements.)

Element	Mass # (A)	Atomic # (Z)	protons (p ⁺)	neutrons (n ⁰)	electrons (e ⁻)
chlorine-37	37	17	17	20	17
²³⁸ U	238	92			92
carbon-14	14		6		6
¹⁹ F			9	10	
	18	8		10	8
¹⁰⁸ Pd				62	46
	8		3		3
		26		32	
⁶⁵ Zn					
boron-11					
phosphorus-32					
magnesium-25					
	197			118	
	20				10
			7		

Chapter 5 – More Practice Exercises

1. Write the full electron configuration for the following elements:

- a. carbon _____
- b. magnesium _____
- c. phosphorous _____
- d. argon _____
- e. potassium _____
- f. aluminum _____

2. Write the Noble Gas (or Core) configuration for the following elements:

- a. boron _____
- b. chlorine _____
- c. beryllium _____
- d. sodium _____
- e. silicon _____
- f. calcium _____

3. Write the full electron configuration for sulfur:

4. Write the full electron configuration for sulfide ion, S^{2-} :

5. What *element* has the same electron configuration as the sulfide ion?

6. What is the term used to indicate that they have the same electron configuration?

7. *Hard* Name three other ions that have the same electron configuration as the sulfide ion.