

HW The Atom

1. Complete the following chart.

Element	Atomic #	Mass #	p ⁺	e ⁻	n ⁰	Shorthand (2 types)
Be						
As						
	29					
		65			35	
				52		
			82			
				104		
					0	
			77			
	68					
		257			157	
U		234				
	23					
				50		
			25			
	10					
Hg						
		23			12	
	13					
Uuu						

2. There are 3 isotopes of Neon. Each isotope contains a different number of neutrons, 10, 11 and 12 respectively. Use shorthand notation to write all 3 isotopes out below.

3. If an element has two isotopes. The first isotope has a natural abundance of 60% and has a mass of 42 amu. The second isotope has a natural abundance of 40% and has a mass of 44 amu. Is the mass going to be closer to 42 or 44 amu and why?

4. Calculate the atomic mass of an element that has an isotope with a mass of 34.969 amu (75.77%) and another isotope with a mass of 36.966 (24.23%). What is this element? Make sure to prove this with your math calculations.

5. Write the standard electron configuration as well as the noble gas configuration for the first 20 elements. Use a separate sheet of paper.
6. What is the electron configuration for Iron, Copper, Uranium and Plutonium? Use a separate sheet of paper.

7. List the electromagnetic spectrum in order of:
 - a. Increasing frequency

 - b. Decreasing energy

 - c. Increasing wavelength

8. What is the electron transition that will produce a wavelength of light of 122 nm?

9. What are the 4 electron transitions that occur in the Bohr model that produce colored light? What are the transitions and also what are their respective colors?