

Names: _____

Atoms & Subatomic Particles

1. Fill in the blanks in the following chart. Include ionic charges when appropriate as in the oxygen anion. The first row is completed as an example.

Nuclear Symbol	Number of Protons	Number of Neutrons	Number of Electrons	Atomic Number (Z)	Mass Number (A)
$^{12}_6\text{C}$	6	6	6	6	12
$^{14}_7\text{N}$			7		
	7	8	7		
			18	20	40
$^{17}\text{O}^{2-}$				8	
^{56}Fe			26		
$^{19}\text{F}^{-}$				9	

2. Refer to the above chart in Question #1 after it is completed:
- Circle isotopes of each other and link them with a double headed arrow to each other.
 - Clearly list below the atoms and ions that are isoelectronic (that is, those that have the same number of electrons).
3. Briefly explain why the identity of an element is determined by the number of protons in its nucleus and why an element's identity cannot be determined by the number of neutrons or the number of electrons.