

Reading the Periodic Table

An atom is made up of protons and neutrons which are in the nucleus, and electrons which are in the electron cloud surrounding the nucleus.

- **Group Number = family of elements**
 - o Groups are vertical columns; the numbers are found at the top of each column
 - o Note: Lanthanides and actinides are not assigned a group number (refer to them as “L” or “A”).
- **Atomic Number = number of protons (p⁺)**
 - o Atomic Number is found above the atomic symbol on the periodic table
 - o It distinguishes one element from another (the number of p⁺ makes each element unique)
- **Atomic Mass = # of protons + # of neutrons.**
 - o Atomic Mass is found below the name of the element on the periodic table
 - o It's based on an average of the isotopes of that element (different #'s of neutrons), thus the decimal
- **# of electrons (e⁻) = # of protons** (in a neutral atom)
- **Classification = type of element** (metal, non-metal, metalloid)
- **Standard State = state of matter** (solid, liquid, gas) at standard temperature and pressure

Use the information above and a periodic table to help you complete the following chart.

Atomic Symbol	Element Name	Group #	Atomic #	Atomic Mass	# of p ⁺	# of e ⁻	Classification	Standard State
H								
Ne								
Hg								
Cl								
Al								
K								
Au								
S								
Ne								
Pb								
			25		25			
		14		28.09				
				112.41	48			
		10			78			
		16					metal	
		16						gas
						2	nonmetal	
		L		138.91				
		14					nonmetal	
						5	metalloid	

Use your periodic table and the information below to determine the correct element for each item.

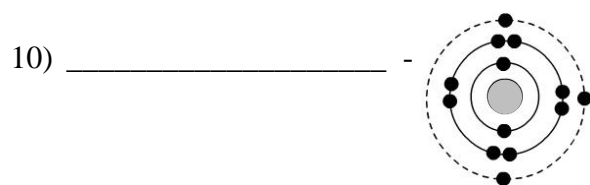
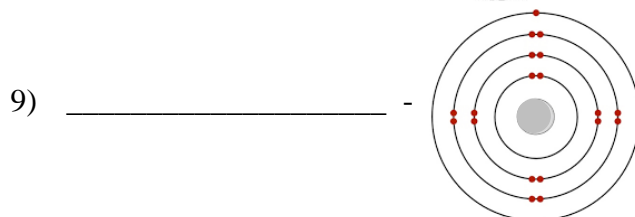
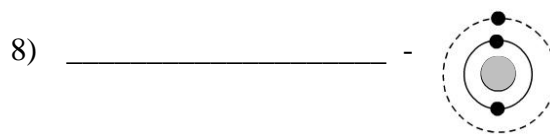
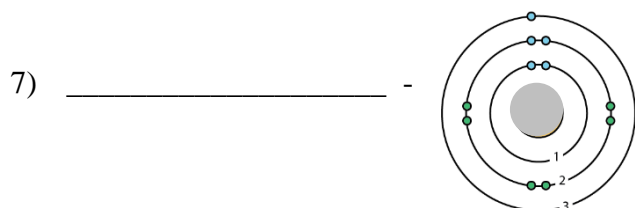
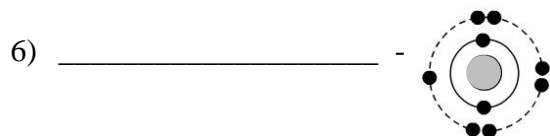
1) _____ - $s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^2$

2) _____ - $1s^2 2s^2 2p^6 3s^2 3p^5$

3) _____ - $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^2 4d^{10} 5p^6 6s^2 4f^{14} 5d^{10}$

4) _____ - $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^2 4d^{10} 5p^4$

5) _____ - $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^2 4d^6$



11) _____ - This element is in **PERIOD 2** -



12) _____ - This element is in **PERIOD 1** -



13) _____ - This element is in **PERIOD 5** -



14) _____ - This element is in **PERIOD 3** -



15) _____ - This element is in **PERIOD 4** -

