Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_ Ast: \_\_\_\_\_

**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**
	+ Groups are vertical columns; the numbers are found at the top of each column
	+ Note: Lanthanides and actinides are not assigned a group number (refer to them as “L” or “A”).
* **Atomic Number = number of protons** (p+)
	+ Atomic Number is found above the atomic symbol on the periodic table
	+ It distinguishes one element from another (the number of p+ makes each element unique)
* **Atomic Mass = # of protons + # of neutrons.**
	+ Atomic Mass is found below the name of the element on the periodic table
	+ 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 | ***hydrogen*** | ***1*** | ***1*** | ***1.008*** | ***1*** | ***1*** | ***nonmetal*** | ***gas*** |
| Ne | ***neon*** | ***10*** | ***10*** | ***20.180*** | ***10*** | ***10*** | ***nonmetal*** | ***gas*** |
| Hg | ***mercury*** | ***12*** | ***80*** | ***200.59*** | ***80*** | ***80*** | ***metal*** | ***liquid*** |
| Cl | ***chlorine*** | ***17*** | ***17*** | ***35.45*** | ***17*** | ***17*** | ***nonmetal*** | ***gas*** |
| Al | ***aluminum*** | ***13*** | ***13*** | ***26.982*** | ***13*** | ***13*** | ***metal*** | ***solid*** |
| K | ***potassium*** | ***1*** | ***19*** | ***39.098*** | ***19*** | ***19*** | ***metal*** | ***solid*** |
| Au | ***gold*** | ***11*** | ***79*** | ***196.97*** | ***79*** | ***79*** | ***metal*** | ***solid*** |
| S | ***sulfur*** | ***16*** | ***16*** | ***32.06*** | ***16*** | ***16*** | ***nonmetal*** | ***solid*** |
| Cu | ***copper*** | ***11*** | ***29*** | ***63.546*** | ***29*** | ***29*** | ***metal*** | ***solid*** |
| Pb | ***lead*** | ***14*** | ***82*** | ***207.2*** | ***82*** | ***82*** | ***metal*** | ***solid*** |
| ***Mn*** | ***manganese*** | ***7*** | 25 | ***54.938*** | 25 | ***25*** | ***metal*** | ***solid*** |
| ***Si*** | ***silicon*** | 14 | ***14*** | 28.09 | ***14*** | ***14*** | ***metalloid*** | ***solid*** |
| ***Cd*** | ***cadmium*** | ***12*** | ***48*** | 112.41 | 48 | ***48*** | ***metal*** | ***solid*** |
| ***Pt*** | ***platinum*** | 10 | ***78*** | ***195.08*** | 78 | ***78*** | ***metal*** | ***solid*** |
| ***Lv*** | ***livermorium*** | 16 | ***116*** | ***291*** | ***116*** | ***116*** | metal | ***solid*** |
| ***O*** | ***oxygen*** | 16 | ***8*** | ***15.999*** | ***8*** | ***8*** | ***nonmetal*** | gas |
| ***He*** | ***helium*** | 18 | ***2*** | ***4.0026*** | ***2*** | 2 | nonmetal | ***gas*** |
| ***La*** | ***lanthanum*** | L | ***57*** | 138.91 | ***57*** | ***57*** | ***metal*** | ***solid*** |
| ***C*** | ***carbon*** | 14 | ***6*** | ***12.011*** | ***6*** | ***6*** | nonmetal | ***solid*** |
| ***B*** | ***boron*** | 5 | ***13*** | ***10.81*** | ***5*** | 5 | metalloid | ***solid*** |

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

1. ***strontium (Sr)*** - s22s22p63s23p64s23d104p65s2
2. ***chlorine (Cl)*** - 1s22s22p63s23p5
3. ***mercury (Hg)*** - 1s22s22p63s23p64s23d104p65s24d105p66s24f145d10
4. ***tellurium (Te)*** - 1s22s22p63s23p64s23d104p65s24d105p4
5. ***ruthenium (Ru)*** - 1s22s22p63s23p64s23d104p65s24d6
6. ***fluorine (F)***  -



1. ***sodium (Na)*** -



1. ***lithium (Li)*** -



1. ***Potassium (K)*** -



1. ***Aluminum (Al)*** -
2. ***oxygen (O)*** - This element is in **PERIOD 2** - **X**
3. ***helium (He)*** - This element is in **PERIOD 1** - **X**
4. ***nitrogen (N)*** - This element is in **PERIOD 5** - **X**
5. ***sodium (Na)*** - This element is in **PERIOD 3** - **X**
6. ***krypton (Kr)*** - This element is in **PERIOD 4** - **X**