Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Per: \_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**ATOMIC RADIUS AND IONIZATION ENERGY TREND WORKSHEET**

1. Which has a larger radius Na (#11) or Li (#3)? Why?
2. Which has a larger radius Mg (#12) or Cl (#17)? Why?
3. Which has a smaller radius P (#15) or S (#16)? Why?
4. Loot at the atom radii for H, Li, Na, and K.
	1. What conclusions can you draw about atom radius within a column?
	2. Could you draw the same conclusion about Be, Mg, and Ca?
	3. Could you draw the same conclusion about F, Cl, and Br?
	4. What is the reason to explain the conclusion you have reached about atom radius within a column?
5. Look at the atomic radii for elements in period 1.
	1. What conclusions can you draw about atom radius within the first period?
	2. Is your conclusion the same for the elements in period 3?
	3. What explanation do you have for the conclusions you have drawn about atom radius within a period?
6. Arrange the following elements in order of INCREASING atomic radius: Ba (#56), S (#16), Te (#52), Al (#13), Br (#35), F (#9)
7. Arrange the following elements in order of DECREASING atomic radius: Au (#79), Ni (#28), Ho (#67), At (#85), C (#6), Np (#93)

1. Look at the elements Li, Na, and K.
	1. What conclusion can you draw about ionization energy within a column?
	2. Would you draw the same conclusion about O, S, and Se?
	3. What reason can you give to support your conclusion about ionization energy within a column?
2. Which has greater ionization energy Na or Mg? Why?
3. Which has greater ionization energy Mg or Al? Why?
4. Look at Al, Si, and P. What conclusions can you draw about ionization energy as the atomic number increases across a period?
5. Why is there a slight fall-back in ionization energy between P and S on the graph?
6. Using just the TREND, arrange the following in order of INCREASING ionization energy: Sr (#38), Pu (#94), As (#33), Po (#84), F (#9) and Li (#3)