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**Task 1**: Describe the trends for ionization energy, atomic radius, electronegativity.

**Task 2:** Review of annotation of the graphs, you can also reference back in your notebook the sections that relate to periodic trends:

1. Select the graph for ionization energy or atomic radius
2. Annotate the graph
   1. Identify the element by their atomic number and list them on the graph
   2. Put a box around the elements of the same period
   3. Find the elements of the same group, label or identify
3. Write the trend with regards to group and period
4. Answer the questions from task 3.
5. Repeat steps 1-4 for the other trend.

**Task 3:** With your partners take turns asking and answering the following questions with each other.

**Atomic radius**

1. What is the element with the largest atomic radius in group 2A?
2. Identify the atomic radius of sodium, hydrogen and chlorine
3. Which group has the smallest atomic radius in a given period? Why?
4. If the trend continued what would you expect the next period to look like include atomic numbers in your answer

**Ionization energy**

1. Which element would have the highest ionization energy in group 2A
2. Identify the ionization energy sodium, hydrogen and neon.
3. Which group would have the smallest ionization energy in a given period? Why?
4. If the trend would continue for elements 21-36 what would you expect the graph to look like? Include which elements you would expect to have the highest and lowest values.

**Answer Key**

**Task 1:**

Ionization energy increases right across a period and up a group.

Atomic radius increases down a group and decreases across a period (gets smaller).

Electronegativity increase up a group and across a period, except for noble gases (group 7A) which do not have an electronegativity due to their complete octet.

**Task 3:**

**Atomic radius**

1. Radium as you move down a group the radius gets larger
2. 2.25 angstroms = sodium, 0.75 angstroms= hydrogen and 0.95 angstroms= chlorine
3. The element in group 1A because it is the first in the period
4. An increase for rubidium above 2.75 angstroms then a decrease in the atomic radius as you move across the period ending the smallest element in group 8A (xeon)

**Ionization energy**

1. Beryllium as you move down a group the ionization energy gets smaller so the largest would be at the top.
2. 5 volts for sodium, 14 volts for hydrogen and 13 volts for chlorine
3. The element in group 8A because the ionization energy increases across a period.
4. The lowest point would be potassium which would be around 3 volts while krypton would be the highest around 15 volts. The amounts would steadily increase across the period from 3 volts to 15 volts.