Periodic Trends
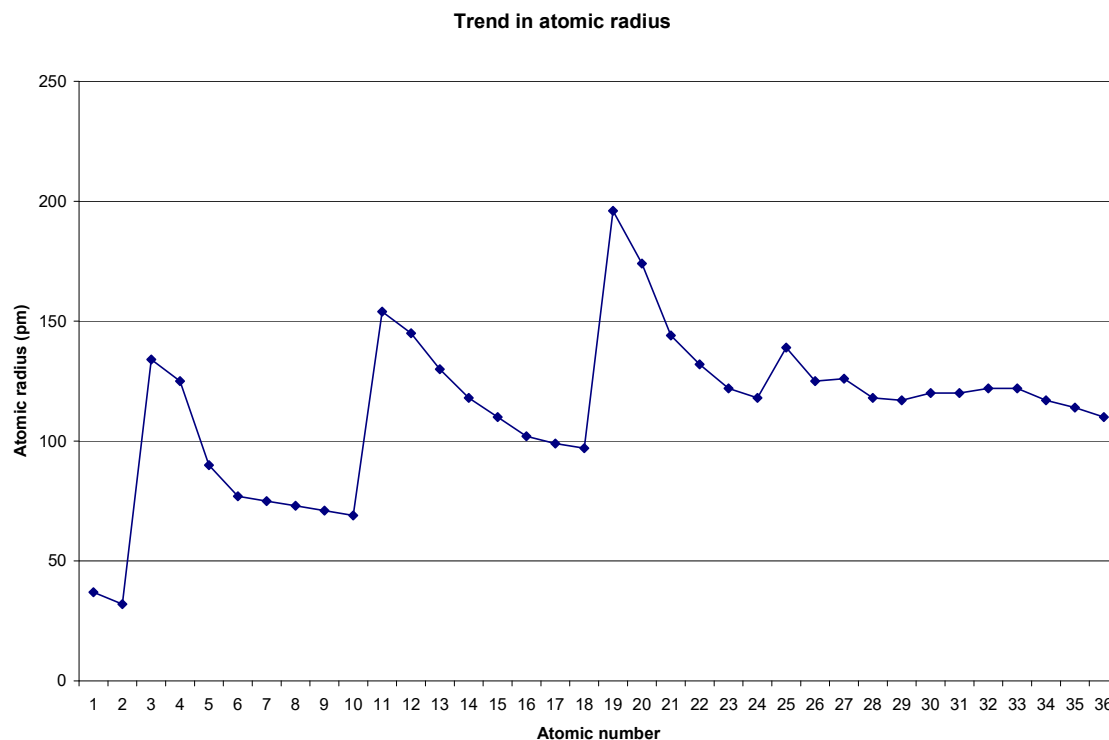
Part I: Definitions
Define the following terms. Then rewrite the definition in your own words.
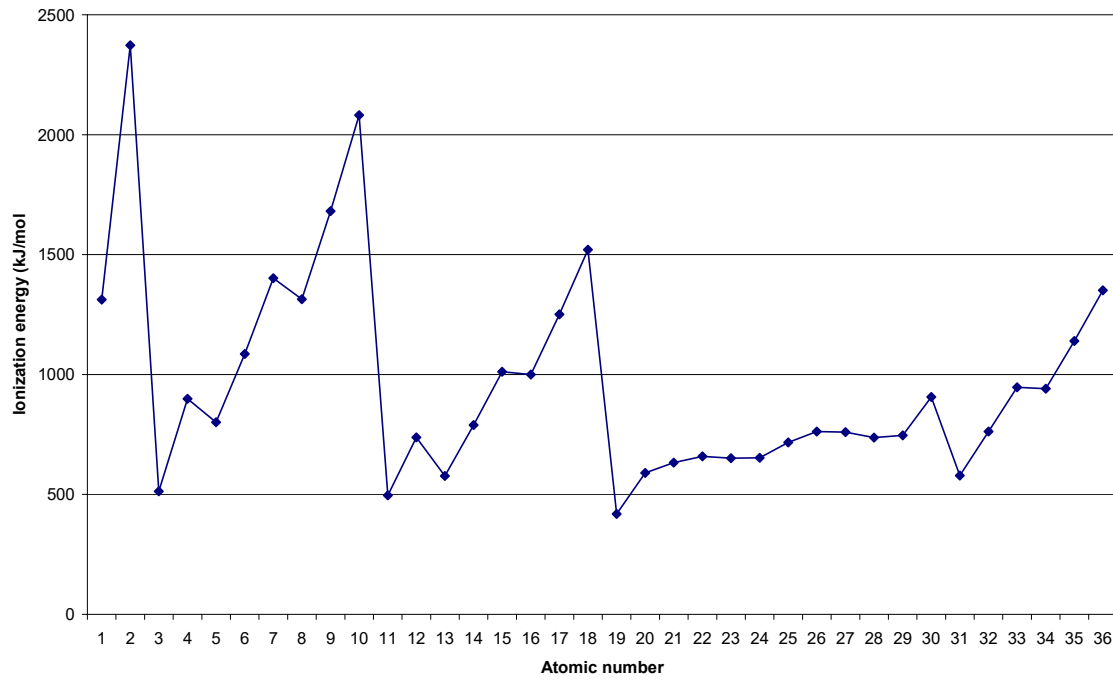
Word	Definition	Rewritten definition
Atomic radius		
Ionization energy		
Electronegativity		
Group		
Period		

Part II: Graphs
On the following graphs, label each element with the element symbol.

Trend in atomic radius

Trend in ionization energy

Trend in electronegativity
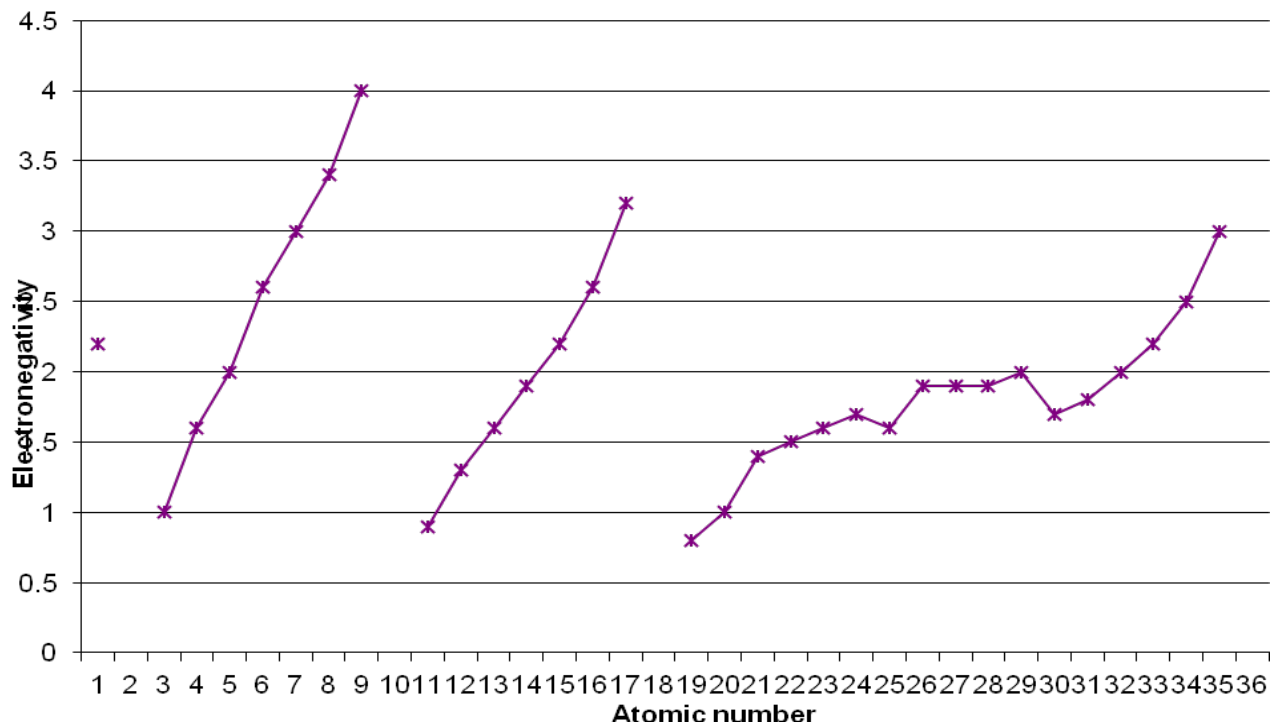
Part III: Trends
Summarize the trends by filling in the blanks.

Atomic radius

    1. As you go across a period on the periodic table, the atomic radius _____ .

    2. This is because…

    3. As you down a column on the PT, the atomic radius _____ .

    4. This is because…

Ionization energy

    5. As you go across a period on the periodic table, the ionization energy _____ .

    6. This is because…

    7. As you down a column on the PT, the ionization energy_____ .

    8. This is because…

    9. How does ionization energy relate to atomic radius/size?

Electronegativity

    10. As you go across a period on the periodic table, the electronegativity_____ .

    11. This is because…

    12. As you down a column on the PT, the electronegativity_____ .

    13. This is because…

    14. How does electronegativity relate to atomic radius/size?

Part IV: Labels
Label the arrows to show if the trends increase or decrease across a period or down a column.

Atomic radius

Ionization energy

Electronegativity

Part V: Additional questions

1. When an atom loses an electron, what is its charge? What do you think happens to the size of the atom?

2. When an atom gains an electron, what is its charge? What do you think happens to the size of the atom?

3. Arrange the following atoms in order of increasing atomic radius: potassium, carbon, rubidium, fluorine, and lithium. Explain your order.

4. What exceptions do you find in the increase of ionization energies across a period?

5. Arrange the following atoms in order of increasing ionization energy: germanium, helium, hafnium, phosphorus, cesium, chromium, and nitrogen. Explain your order.