Name: _____

Date: _____

Periodic Table
Trends Worksheet

Purpose: The Periodic Table is a useful tool that helps us predict properties of various elements. In thisactivity, we will look at 3 properties:1.Atomic radius: The distance from the atomic nucleus to the outmost occupied orbital in a atom2.Electronegativity: The ability of an atom to attract a bonded pair of electrons from anotheratom3.Ionization Energy: The energy needed to remove an electron from a neutral gaseous atom4.Electron Affinity: The energy released when an electron in added to a neutral gaseous atom

Data:

Element	Atomic Radius	Electronegativity	1st Ionization Energy
Li			
Be			
B			
Na			
Mg			
Al			
C			
Si			
N			
P			

Discussion:

1.What appears to be the trend in atomic radius as you move from left to right in a row?

2.What appears to be the trend in atomic radius as you move down a column?

3.Predict the change in atomic radius of the next elements in a row (C, Si), then check thoseproperties. Do they match your predictions?

4.Check the atomic radius of the next elements in the series (N,P). How do they fit the predictedpattern?

5.Is the pattern of atomic radius absolute or general (always true or generally true)?

6.Consider all three of the properties that you have examined.

a.State the general trend for each property if you move from left to right on the Periodic Table.Now, state the general trend from top to bottom.
b.How do these properties show periodicity (periodic trends)?

7.Use the links given below to examine the same three properties graphically. View the line graph ofatomic radius.

a.What do the different colors show?
b.Describe the pattern in the second period that is repeated in the third period.
c.How does this graph agree with your observations of atomic radius made earlier?
d.Why do the fourth and fifth periods have more dots and different patterns?

8.Find the same type of graph for 1st ionization energy and electronegativity. Answer the samequestions for these graphs as you did for the atomic radii graph.

9.Use the color-coded tables,atomic radius, ionization energy

a. How does this show periodic trends of the selected property?

b. Which method did you find most informative?

c.Which method was easiest to see the general pattern and not get confused by exceptions in thatpattern?