

Lab: Discovering Periodic Trends Graphing

Name: _____ Date: _____

Create EACH of the following three graphs below using GOOGLE SHEETS:

Graph #1: Atomic Number (x-axis) vs. Atomic Radius (y-axis)

Graph #2: Atomic Number (x-axis) vs. Ionization Energy (y-axis)

Graph #3: Atomic Number (x-axis) vs. Electronegativity (y-axis)

- 1) Choose Chart Type: **LINE**
- 2) Under "Customize" tab:
 - a. SERIES → Select **POINT SHAPE** – Circle ● *(1/2 pt each)*
 - b. SERIES → Check the box for **DATA LABELS** *(1/2 pt each)*

For EACH of the three graphs, include the following:

- 1) **EACH** graph must include its appropriate **data table**. *(1/2 pt each)*
- 2) **EACH** graph should have a **title**. *(1/2 pt each)*
- 3) **EACH** graph's **X-axis is labeled** with a title and appropriate units. *(1/2 pt each)*
- 4) **EACH** graph's **Y-axis is labeled** with a title and appropriate units. *(1/2 pt each)*

TYPE up an ANALYSIS for EACH graph that includes each of the following:

Write a comprehensive/detailed analysis paragraph for the **GROUP** trend AND **PERIOD** trend on the backside of each graph. Therefore, EACH graph should have a total of **TWO** paragraphs. **EACH** group/period trend paragraph should include the following components:

- 1) **STATE/DESCRIBE** each trend for both the group and period (*Ex: What happens as you go down a group? What happens as you go across a period?*). *(1 pt each)*
- 2) **EXPLAIN WHY** each trend occurs. This component should be very detailed and thorough. *Use your class notes for reference. (2 pts each)*
- 3) **INCLUDE SPECIFIC DATA POINTS FROM THE GRAPH** that will **sufficiently** provide supporting evidence to justify the reasoning of the trend. *(1 pt each)*

When completed, PRINT OUT ONE hard copy of the lab per group to submit to the teacher and include group members' names on report.

Atomic Number (Z)	Atomic Radius (pm)	Ionization Energy (kJ/mol)	Electronegativity
1	37	1312	2.2
2	32	2372	0
3	134	520	0.97
4	125	899	1.47
5	90	801	2.01
6	77	1086	2.5
7	75	1402	3.07
8	73	1314	3.5
9	71	1681	4.1
10	69	2081	0
11	154	496	1.01
12	145	738	1.23
13	118	578	1.61
14	111	786	1.74
15	106	1012	2.06
16	102	1000	2.44
17	99	1251	2.83
18	97	1520	0
19	196	419	0.91
20	174	590	1.04
31	120	579	1.82
32	122	762	2.02
33	119	944	2.2
34	117	941	2.48
35	114	1140	2.74
36	110	1351	2.94