

Name: \_\_\_\_\_

Location: \_\_\_\_\_

### A . Reading Graphs

Being able to read a graph is a very important skill. Many fields of endeavor, including science, politics, and economics often use graphs to quickly and effectively relate a large amount of information.

Look at the graph on the right and answer the questions. The graph has to do with water.

1. What is the **label** on the x-axis?

...the y-axis?

2. What **units** are used to describe these labels?

...x

...y

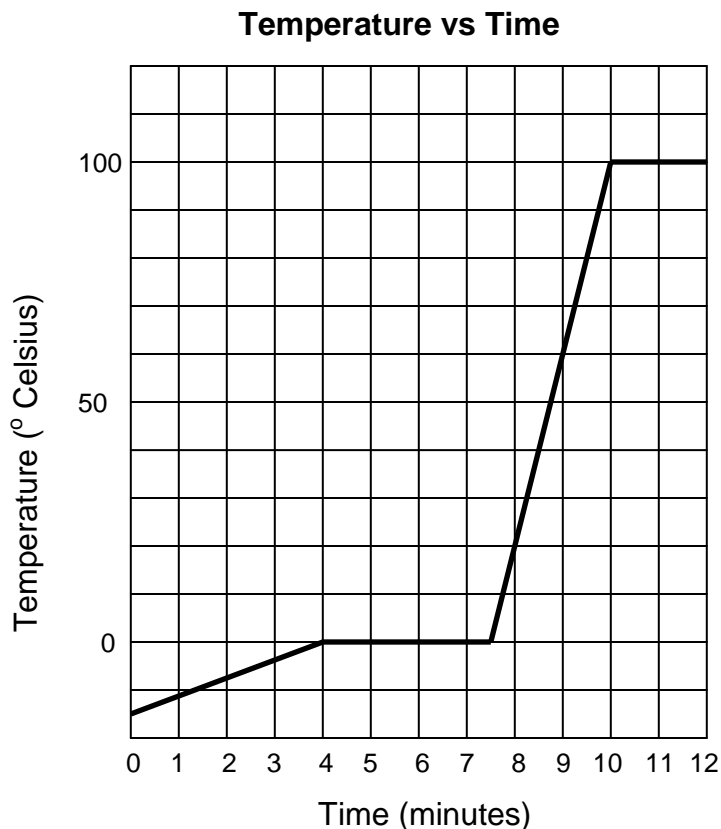
3. Describe in detail what you think the experimenter did to get the data for this graph.

4. Over what time interval(s) does the temperature remain constant? Include units.

5. Over what time interval(s) is the temperature rising? Include units.

6. What is the temperature of the water after four minutes? Include units.

7. At what time is the temperature 10°C? Include units.



### B. Creating Graphs

All good graphs have several items in common that you need to know and apply this year. All good graphs...

1. have a title at the top.
2. have axes that are labeled, with proper units.
3. are neat, and easy to read.
4. use most of the available space.

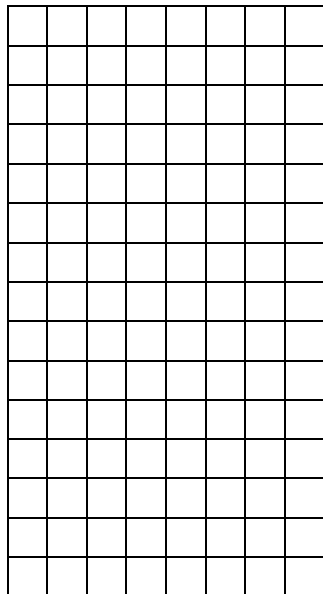
8) Using the information above (B) and the previous example (A) create 2 graphs for the data below. Provided are two titled grids for your graphs. Allow the element symbols to be your x coordinates. The radii will be the y-axis in each graph. Connect the points. (Note: Atomic radius is the distance from the nucleus or center of the atom to the outermost electron. Ionic radius is the distance from the nucleus to the outermost electron as well, but in an ion either extra electrons have been added or actual electrons have been removed.) ( nm = nanometer, which is a billionth of a meter) As above, the Y-axis need not begin at Zero.

9) Hydrogen is in Group IA of the Periodic Table with the elements listed below. Do you have any idea why I have excluded hydrogen from this list? I have provided a Periodic Table with the Worksheets.

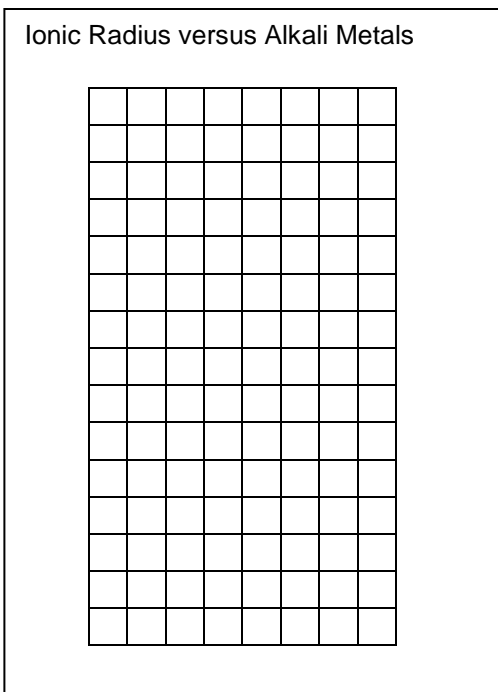
8)

Element	Atomic Radii (nm)	Ionic Radii (nm)
Li	0.152	0.068
Na	0.185	0.098
K	0.227	0.133
Rb	0.247	0.148
Cs	0.265	0.167

Atomic Radius versus Alkali Metals



Ionic Radius versus Alkali Metals



10) Write a statement interpreting the two graphs. The conclusion is the same for both.

**C. Scientific Notation** and the use of your **scientific calculator** -

Go to :

**Skip** the portion labeled **On your cheap non-scientific calculator**. (You may study that if you like, however.)

Try the quiz. Record your answers and marking what you missed.

**D. Quiz Please show me the answer you determined. That will allow me to help you in the future.**

**Do you recognize your errors?**

1)

4)

2)

5)

3)

6)