Name:	Class Period:
Lab Partner	Lab Partner

The Periodic Law Test

Objectives:

- In this exercise, you will use your knowledge of **periodic properties** and a **list of clues** to correctly arrange the elements in groups 1, 2 and 13 — 18.

Procedure:

1. Use the clues GIVEN to determine the proper location for each of the code letters that represent the elements.
2. As you determine where the symbols go, place those symbols in the upper right hand corner of the boxes on the periodic table chart.
3. After you have filled in all of the symbols, Put the correct element symbol in the boxes in the lower left hand corner.
4. Fill in the atomic mass in the upper left hand corner and the atomic number in the lower left hand corner of the boxes on the periodic table chart.
5. From your regular periodic table, draw the zig zag staircase line for the metalloids on the periodic chart.
6. Once you have completed the blank periodic chart, answer the practice questions.
7. The following are the element symbols that you will be using to fill in your periodic chart. Each set of elements given below appear in GROUPS:

   DLQ, RHT, OPK, JFBI, ZEMA, UCX. YNG, WVS.

The Clues:

- M has an. atomic number three times that of Q
- S has a total of six electrons
- J_2G is the simple formula of an oxide
- F is less dense than I
- I is an alkali metal
- Z has an outer energy level structure of s^2p^6
- X is a liquid and C is a gas
- E has ten protons
- U has an atomic number larger than. C
- A has an atomic number one higher than B
- L is an alkaline earth element with an electronegativity of 1.0

- O is a semi metalU is a halogen
- The atomic mass of Q is more than that of D
- Y has an atomic mass 2 times that of G
- Atoms of J are larger than those of I
- P has an atomic number one less that of G
- H has the highest ionization energy of its group
- T has the largest atomic mass of its group
- O has five electrons in its outer energy level
- The electrons of atom V are distributed over three energy levels

Additional Hints:

- USE PENCIL!!!!!
- Density increases as you go down a group
- In a group, atomic size increases as the atomic number increases

Periodic Table: Regents Practice Name _____

___ 1) Germanium is classified as a

A) noble gas
B) nonmetal
C) metal
D) metalloid

___ 2) Which of the following elements has the *highest* electronegativity?

A) Al
B) Ca
C) K
D) H

___ 3) As the elements in Period 2 of the Periodic Table are considered in succession from left to right, there is a decrease in atomic radius with increasing atomic number. This may *best* be explained by the fact that the

A) number of protons increases, and the number of shells of electrons increases
B) number of protons decreases, and the number of shells of electrons increases
C) number of protons increases, and the number of shells of electrons remains the same
D) number of protons decreases, and the number of shells of electrons remains the same

___ 4) Which element has properties of electrical conductivity and luster and exists as a liquid at STP?

A) Br
B) C
C) Hg
D) I

___ 5) Based on the *Properties of Selected Elements* chemistry reference table, which of the following atoms requires the *least* energy for the removal of the most loosely bound electron?

A) Be
B) Sn
C) Br
D) Sr

___ 6) As the elements in Group 17 are considered in order of increasing atomic number, the chemical reactivity of each successive element

A) increases
B) remains the same
C) decreases

___ 7) Which two groups of the Periodic Table contain metals that are so active chemically that they occur naturally only in compounds?

A) 1 and 2
B) 1 and 11
C) 2 and 12
D) 11 and 12

___ 8) Which list of elements contains a metal, a metalloid, and a nonmetal?

A) Zn, Ga, Ge
B) Cd, Sb, I
C) F, Cl, Br
D) Si, Ge, Sn

___ 9) In Period 3, from left to right in order, each successive element will

A) decrease in atomic mass
B) decrease in electronegativity
C) increase in number of protons
D) increase in metallic character

___ 10) Which element is a brittle, nonconducting solid at 25°C?

A) S
B) Al
C) Bi
D) Br

___ 11) At STP, solid carbon can exist as graphite or as diamond. These two forms of carbon have

A) the same properties and the same crystal structures
B) different properties and the same crystal structures
C) different properties and different crystal structures
D) the same properties and different crystal structures

___ 12) The elements in the Periodic Table are arranged in order of increasing

A) mass number
B) neutron number
C) atomic number
D) atomic radius

___ 13) Which of the following ions has the *smallest* radius?

A) F^-
B) Cl^-
C) Rb^+
D) K^+

___ 14) Which element is malleable and conducts electricity?

A) sulfur
B) phosphorus
C) iodine
D) iron

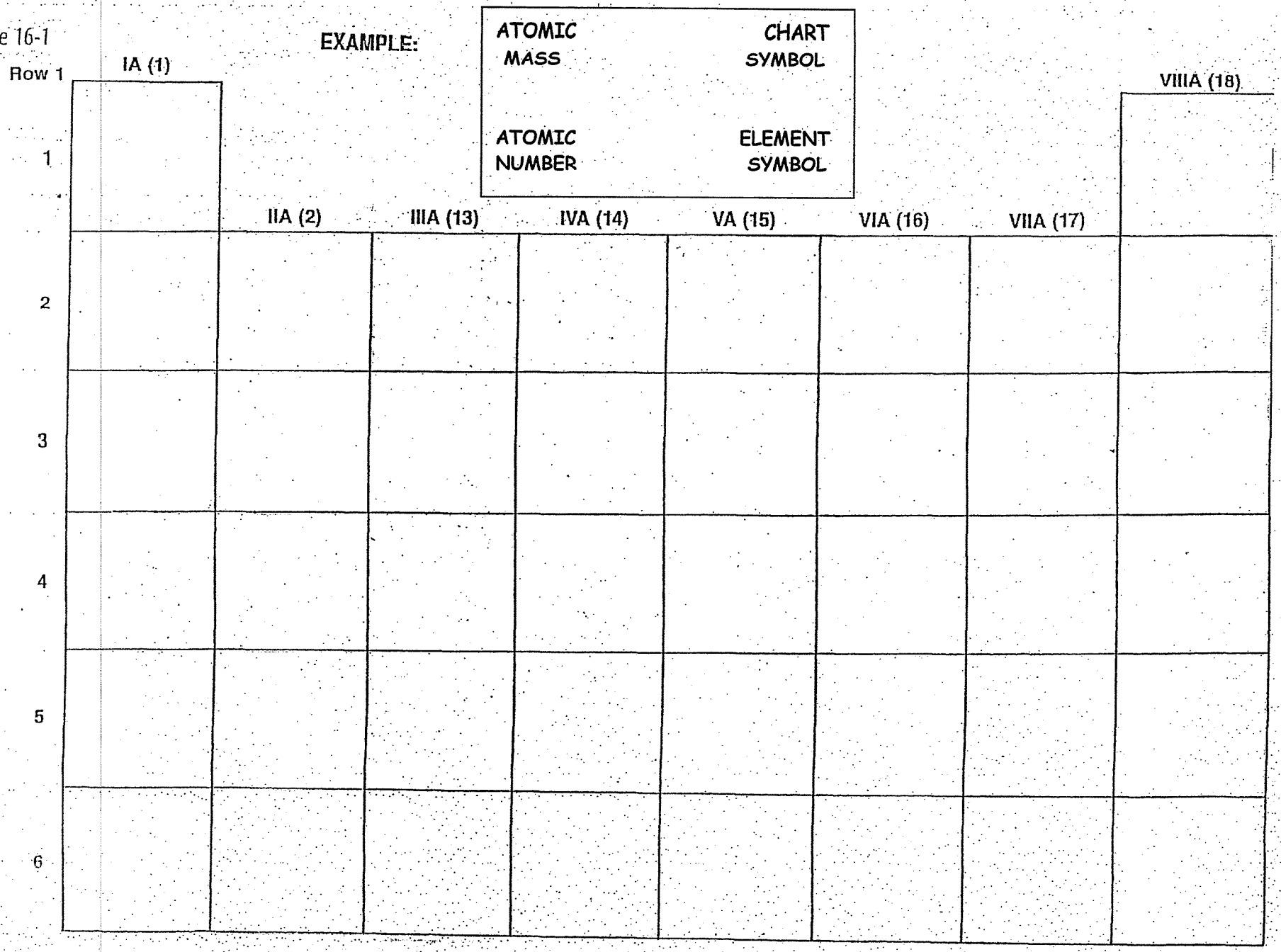
___ 15) As the elements in Group 17 on the Periodic Table are considered from top to bottom, what happens to the atomic radius and the metallic character of each successive element?

A) The atomic radius decreases and the metallic character increases.
B) The atomic radius increases and the metallic character decreases.
C) The atomic radius and the metallic character both decrease.
D) The atomic radius and the metallic character both increase.

___ 16) Element *X* is a solid that is brittle, lacks luster, and has six valence electrons. In which group on the Periodic Table would element *X* be found?

A) 1
B) 2
C) 15
D) 16

Table 16-1


EXAMPLE:
ATOMIC MASS
CHART SYMBOL
ATOMIC NUMBER
ELEMENT SYMBOL
Row 1
IA (1)
IIA (2)
IIIA (13)
IVA (14)
VA (15)
VIA (16)
VIIA (17)
VIIIA (18)
1
2
3
4
5
6