Name:_____

6.3 Periodic Trends Reading Guide

Directions: Use the reading from pages 162-171 to help you answer the following questions.

1. How does atomic size change in groups and across periods (left to right)?

2. When do ions form?

3. What is the trend for first ionization energy in groups and across periods?

4. Explain why the second ionization energy is larger than the first ionization energy.

5. How do electronegativity values change in groups and across periods?

6. Arrange these elements in order of decreasing atomic size: sulfur, chlorine, aluminum, sodium.

7.   Does your sequence show a period trend or a group trend?

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8. Identify which element in each pair has the larger first ionization energy.

    1. sodium, potassium

    2. magnesium, phosphorus

10. Why is the first ionization energy of a nonmetal much higher than that of an alkali metal?

11. Why does the size of an atom tend to increase from top to bottom in a group?

12. Why does the size of an atom tend to decrease from left to right across a period?

Directions: Use pages 162-171 to answer the questions below.

Trends-Atomic size, Ion Size, Ionization Energy, Electron Affinity

1. Circle the one from each pair that would be the larger in size:

(A) F atom or O atom   (B) Ba atom or Ra atom # 88   (C) Hf atom #72 or Ti atom #22

(D) Cs ion or Ba ion   (E) Al ion or Al atom   (F) Po ion #84 or At ion #85

(G) I ion or I atom   (H) Dy atom #66 or Cf atom #98 (I) As #33 atom or Cl atom

(J) Ca atom or Ca ion   (K) W atom #74 or Gd atom #74   (L) Mg ion or Na ion

(M) Sb^{-3} #51 or Sb^{+4} (N) Si^{+4} or P^{-3}

2. Circle the element that has a larger ion size:

(A) B 3+or Li 1+   (B) Mg 2+ or S 2-   (C) N 3- or P 3-

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3. Circle the element with the greater first ionization energy (IE):

(A) Pb or Sn   (B) B or C   (C) Ba or At #85

(D) Lr #103 or Ra #88   (E) Cs #55 or V #23   (F) Si # 14 or Ag

4. Circle the element with the lower electronegativity (EN):

(A) C or N   (B) Na or K   (C) Ta #73 or Cu   (D) Pd #46 or Mo #4