

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

### Honors Chemistry Quick-Check: The Periodic Table

1.
  - a.) \_\_\_\_\_ Element named in honor of the "Father of the Periodic Table"
  - b.) \_\_\_\_\_ The chemical and physical properties are a function of their atomic (mass / number).
  - c.) \_\_\_\_\_ Term for horizontal rows
  - d.) \_\_\_\_\_ Term for vertical columns
  - e.) \_\_\_\_\_ Element of 3<sup>rd</sup> period, ½ filled  $p$  sublevel.
  - f.) \_\_\_\_\_ Which element(s) has no  $d$  electrons? Mg, Au, I, Cs
  - g.) \_\_\_\_\_ Number of elements in 3<sup>rd</sup> period with only 2 valence electrons
  - h.) \_\_\_\_\_ Family group that ends with  $s^2p^5$
  - i.) \_\_\_\_\_ Family with filled valence shell
  - j.) \_\_\_\_\_ Element in family with filled valence shell that only contains  $s$  electrons.
  - k.) \_\_\_\_\_  $[\text{Kr}]5s^24d105p^3$
  - l.) \_\_\_\_\_ 4<sup>th</sup> period alkaline Earth metal
  - m.) \_\_\_\_\_ Number of valence electrons that the alkali metals have
  - n.) \_\_\_\_\_ lightest alkali metal
  - o.) \_\_\_\_\_ largest alkali metal
  - p.) \_\_\_\_\_ largest element in 3<sup>rd</sup> period.
  - q.) \_\_\_\_\_ Which electron configuration(s) is/are not allowed:  $7p^5$ ,  $4f^2$ ,  $3p^7$ ,  $2d^1$
  - r.) \_\_\_\_\_ 2 electrons in an orbital. If quantum set = 3,1,0, +½ what is other quantum set of numbers?
  - s.) \_\_\_\_\_ Ground state, 5<sup>th</sup> period element with valence orbital notation:  $\uparrow\downarrow$   $\uparrow\downarrow$   $\uparrow$   $\uparrow$
  - t.) \_\_\_\_\_ Sublevel filling in the actinide series
  - u.) \_\_\_\_\_ element in 6<sup>th</sup> period with 5 valence electrons
  - v.) \_\_\_\_\_ maximum number of electrons allowed in the 3d sublevel.
  - w.) \_\_\_\_\_ How many  $s$  sublevel electrons does an atom of lead have?
  - x.) \_\_\_\_\_ Number of valence electrons for Sr, S, Pb
  - y.) \_\_\_\_\_ Number of orbitals for the 4<sup>th</sup> energy level
  - z.) \_\_\_\_\_ Number of paired and unpaired electrons in Sb
  - aa.) \_\_\_\_\_ *No 2 electrons in the same atom can have the same 4 quantum numbers.*

#### 2. Circle the larger particle

- |                            |  |
|----------------------------|--|
| a.) Mg or Ca               | f.) Ni or Ag                           |
| b.) P or $\text{P}^{3-}$   | g.) I or P                             |
| c.) K or As                | h.) $\text{O}^{2-}$ or $\text{S}^{2-}$ |
| d.) Sn or S                | i.) $\text{Ca}^{2+}$ or Cl-            |
| e.) $\text{Al}^{3+}$ or Al | j.) As or Br                           |

#### 3. Circle particle with larger ionization energy

- |             |              |
|-------------|--------------|
| a.) Se or S | d.) O or P   |
| b.) K or Cs | e.) Al or Ca |
| c.) F or O  | f.) I or O   |