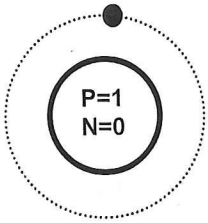
Name Answer Key Hour _____

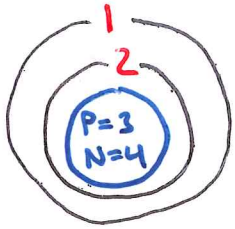
# DRAWING BOHR MODELS

(Honors Chemistry)

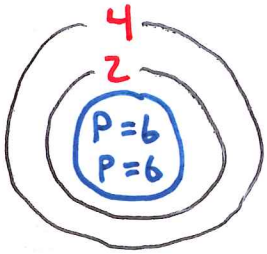
**HYDROGEN**



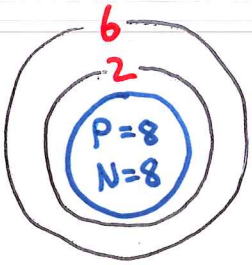

**LITHIUM**



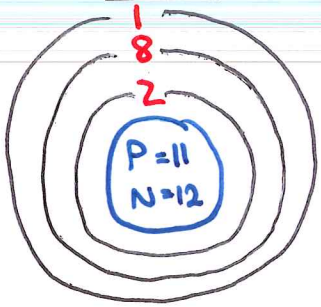

**CARBON**



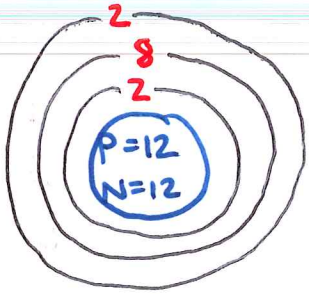

**OXYGEN**



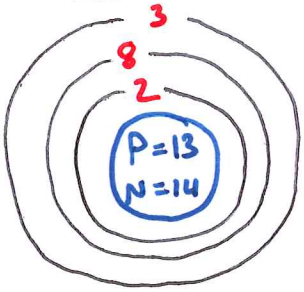

**SODIUM**



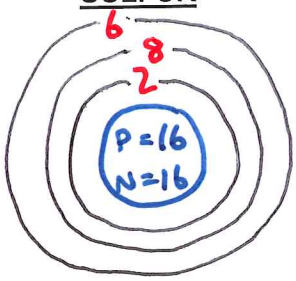

**MAGNESIUM**



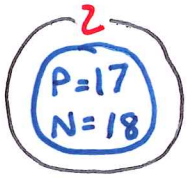

**ALUMINUM**



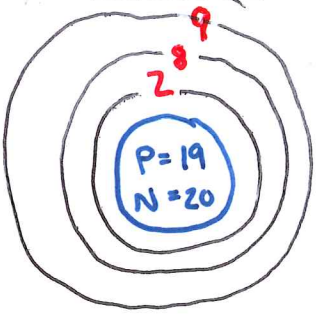

**SULFUR**



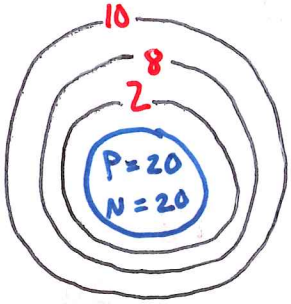

**CHLORINE**



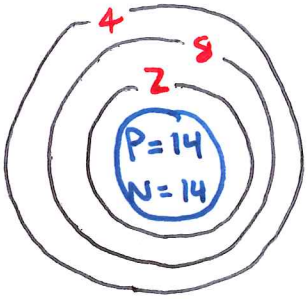

**POTASSIUM**




**CALCIUM**




**SILICON**



# THE QUANTUM MECHANICAL MODEL

**(Honors Chemistry)**

1. How many electrons fit in each of the following sublevels?

   a. s = 2
   b. p = 6
   c. d = 10
   d. f = 14

2. How many electrons can exist in one orbital? 2

3. Identify which sublevels exist in the following principal energy levels. *(s, p, d, f)*

   a. 1 = s
   b. 2 = s + p
   c. 3 = s + p + d
   d. 4 = s + p + d + f

4. How many orbitals are in the following sublevels?

   a. 1s = 1
   b. 2p = 3
   c. 3d = 5
   d. 4p = 3
   e. 2s = 1
   f. 4f = 7
   g. 3s = 1
   h. 4p = 3

5. How many orbitals are in the following principal energy levels?

   a. 1 = 1
   b. 2 = 4
   c. 3 = 9
   d. 4 = 16

6. Look at the following electron configurations and determine the number of orbitals present in each of the atoms by looking at the number of sublevels present. *(Hint: the orbitals don't have to be occupied)*

   Cl: $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^5$ 9

   K: $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 4s^1$ 10

   N: $1s^2\ 2s^2\ 2p^3$ 5

   Na: $1s^2\ 2s^2\ 2p^6\ 3s^1$ 6

   Br: $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 4s^2\ 3d^{10}\ 4p^5$ 18

   Zr: $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 4s^2\ 3d^{10}\ 4p^6\ 5s^2\ 4d^2$ 24

   Sn: $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 4s^2\ 3d^{10}\ 4p^6\ 5s^2\ 4d^{10}\ 5p^2$ 27