Name:

Period:

**Orbital Notation Homework**

1. Who was Niels Bohr, and what did he think an atom looked like?
2. Draw a picture of what Bohr thought an atom looked like (an electron configuration) – use Silicon as your example element.
3. How do electrons actually move around the nucleus? What are these “rings” called?
4. Give three examples of orbitals and draw them.
5. In this example, n = 2. What does n represent? What does the two represent? Give an example of an element in n = 2.
6. Identify on this blank periodic table which sections are S, P, D and F orbital regions. Also include the periods (using n = 1, 2, 3, etc.) to the left of the Periodic Table provided.



1. Write the orbital notations for each of the following elements:
Helium Carbon Sulfur Potassium

Beryllium Oxygen Magnesium Argon
2. Discover the element using the given orbital notations:
1s22s22p1 1s22s22p6 1s22s22p63s23p1 1s22s22p63s23p5

1s1 1s22s22p1 1s22s22p63s1 1s22s22p63s23p64s2
3. **Challenge**: Identify the following elements using the given orbital notations:
1s22s22p63s23p64s23d104p65s24d5 [Kr] 5s24d105p5 [Xe] 6s25d14f12

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**Orbital Notation Homework 2**

1. In this example, n = 4, ℓ = 1. What does n represent? What does the four represent? What does ℓ represent? What does the 1 represent? Give an example of an element in n = 4, ℓ =1?
2. Review: Write the orbital notation for each of the following (Row, Section, Seat #) **Neon Magnesium Sulfur Calcium**
3. Review: Write the orbital notation for each of the following:
**1s22s2 1s22s22p3 1s22s22p63s2 1s22s22p63s23p6**
4. Explain the three major quantum principles discussed in class.
5. Find Gallium on your periodic table
**Row (n = ): Section (S,P,D,F): Seat #:**
Write the Orbital Notation for **Gallium** (remember: D-section = n-1):
6. Name all of the Noble Gasses:
7. Write the NOBLE GAS NOTATION for each of the following (remember: D-section = n – 1):
**Chromium Germanium Strontium Iodine

Aluminum Zinc Ruthenium Barium**
8. Identify the elements described using NOBLE GAS NOTATION:
**[Ar] 4s2 [Ar] 4s23d9 [Ar] 4s23d104p3

[Kr] 5s1 [Kr] 5s24d3 [Xe] 6s1**
9. Find Ytterbium on your periodic table
**Row (remember: F-section = n-2): Section: Seat #**
Write the NOBLE GAS NOTATION for **Ytterbium** (remember: F-section = n-2):
10. Write the NOBLE GAS NOTATION for each of the following (remember: D-section n-1; F-section n-2)
**Yttrium Tantalum Europium Bismuth

Francium Curium Lawrencium Mercury**
11. Identify the elements described using NOBLE GAS NOTATION:
**[Xe] 6s25d14f3 [Xe] 6s24f145d3 [Xe] 6s24f145d106p2[Rn] 7s2 [Rn] 7s26d15f12 [Rn] 7s25f146d4**