Quantum Numbers

**Understanding the Quantum Numbers:** This video tutorial will take you through
each of the quantum numbers and includes visuals and examples

 http://youtu.be/**KrXE\_SzRoqw**


# Writing Electron Configurations:

Let’s consider the **GROUND STATE** electron configuration for Neon (Ne) and Magnesium (Mg). The ground state means that all of the electrons are in there non-excited states and occupy the lowest energy levels.

Draw the **Aufbau Diagram** for ***Neon***; knowing it has \_\_\_\_\_\_\_\_\_\_\_\_ electrons (look at periodic table).

 Write the **quantum numbers** for the indicated electron in the diagram (Teacher will indicate the one).

 $n =$ \_\_\_\_, $l =$\_\_\_\_\_\_, $m\_{l}=$ \_\_\_\_\_\_, $m\_{s}=$ \_\_\_\_\_\_\_

 Draw the **Lewis structure** for this atom (valence electrons)

We can also write what is known as the **electron configuration** for this atom as follows…

**Neon (Ne):**

Draw the **Aufbau Diagram** for ***Magnesium***; knowing it has \_\_\_\_\_\_\_\_\_\_\_\_ electrons.
 Write the quantum numbers for the indicated electron in the diagram (Teacher will indicate the one).

 $n =$ \_\_\_\_, $l =$\_\_\_\_\_\_, $m\_{l}=$ \_\_\_\_\_\_, $m\_{s}=$ \_\_\_\_\_\_\_

 Draw the **Lewis structure** for this atom (valence electrons)

We can also write what is known as the **electron configuration** for this atom as follows…

**Magnesium (Mg):**

**Or shorthand:**

Draw the **Aufbau Diagram** for ***Chlorine***; knowing it has \_\_\_\_\_\_\_\_\_\_\_\_ electrons.
 Write the quantum numbers for the indicated electron in the diagram (Teacher will indicate the one).

 $n =$ \_\_\_\_, $l =$\_\_\_\_\_\_, $m\_{l}=$ \_\_\_\_\_\_, $m\_{s}=$ \_\_\_\_\_\_\_

 Draw the **Lewis structure** for this atom (valence electrons)

We can also write what is known as the **electron configuration** for this atom as follows…

**Chlorine (Cl):**

**Or shorthand:**

# Electron Configurations

Draw the **electron configurations** for the following **atoms** and **ions** (you an use the shorthand for high atomic numbers).

**Ground State Atoms:**

1. Radium (Ra):
2. Cobalt (Co):
3. Bromine (Br):
4. Silver (Ag):

**Ions (Charged Atoms):** (**positive** have \_\_\_\_\_\_\_\_\_electrons / **negative** have \_\_\_\_\_\_\_\_\_\_ electrons)

1. Fe2+:
2. O2-:
3. K+:
4. Co3+