You are the manager the Aspen Hotel. It is an old hotel that doesn’t have an elevator. Your major task is to register guests, keeping the following rules in mind:

* Each room can hold 2 people
* People are lazy and therefore want to stay on the lowest floor possible.
* People prefer to room by themselves, unless it means they have to go to a higher floor.
* You use or to indicate where you have registered people.

Your hotel can hold 30 people and has floor plan like this.

7th floor \_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_

6th floor \_\_\_

5th floor \_\_\_ \_\_\_ \_\_\_

4th floor \_\_\_

3rd floor \_\_\_ \_\_\_ \_\_\_

2nd floor \_\_\_

1st floor \_\_\_

A full hotel would look like the diagram below:

7th floor \_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_

6th floor \_\_\_

5th floor \_\_\_ \_\_\_ \_\_\_

4th floor \_\_\_

3rd floor \_\_\_ \_\_\_ \_\_\_

2nd floor \_\_\_

1st floor \_\_\_

7 registered people would look like the diagram below:

7th floor \_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_

6th floor \_\_\_

5th floor \_\_\_ \_\_\_ \_\_\_

4th floor \_\_\_

3rd floor \_\_\_ \_\_\_ \_\_\_

2nd floor \_\_\_

1st floor \_\_\_

**Practice: (on your own paper)**

1. Draw what the hotel diagram would look like if you have 15 people registered
2. Draw what the hotel diagram would look like if you have 25 people registered

**Electron Configuration:** The hotel is an analogy which relates to electron orbitals. Electron orbitals are modeled by the picture below and have orbital names instead of floor levels, but generally follow the same rules as the people in the analogy.

3d \_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_

4s \_\_\_

3p \_\_\_ \_\_\_ \_\_\_

3s \_\_\_

2p \_\_\_ \_\_\_ \_\_\_

2s \_\_\_

1s \_\_\_

**Practice: (on your own paper)** Show how the electron orbitals would fill:

a. 3 electrons b. 10 electrons c. 8 electrons d. 24 electrons e. 19 electrons