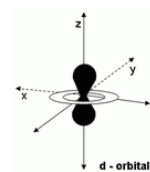


Name: \_\_\_\_\_ Date: \_\_\_\_\_  
Chemistry

Worksheet



# The Quantum Numbers

**DIRECTIONS:** List the four quantum numbers, the symbols and write a description.

Name	Symbol	Description
1. _____	_____	_____
2. _____	_____	_____
3. _____	_____	_____
4. _____	_____	_____

**DIRECTIONS:** Write the best answer for the following statements on the blank provided.

- \_\_\_\_\_ 5.  $e^-$  in the same atom cannot have the same 4 quantum numbers  
\_\_\_\_\_ 6. the probable path or position of an electron  
\_\_\_\_\_ 7. impossible to know the both momentum and position of electrons  
\_\_\_\_\_ 8. used to describe the probable locations of electrons in atoms

**DIRECTIONS:** List the four types of **subshells** and the number of orbitals (positions) in each.

9. \_\_\_\_\_ 10. \_\_\_\_\_ 11. \_\_\_\_\_ 12. \_\_\_\_\_

**DIRECTIONS:** Write the best answer for the following statements on the blank provided.

- \_\_\_\_\_ 13. the maximum number of electrons in any atomic orbital  
\_\_\_\_\_ 14. the number of subshells in  $n=4$   
\_\_\_\_\_ 15. the number of atomic orbitals in 3d sublevel  
\_\_\_\_\_ 16. the maximum number of electrons in the following segment [3s 3p 4s 3d 4p 5s 4d]  
\_\_\_\_\_ 17. the maximum number of positions in the following sub shell 6f

**WHY** is it important to know what the electron is and where it is located?

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**“To deny, to believe, and to doubt absolutely -- this is for man what running is for a horse.” - Blaise Pascal**