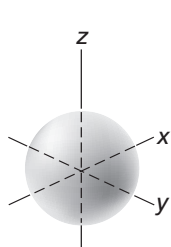


TEACHING TRANSPARENCY MASTER

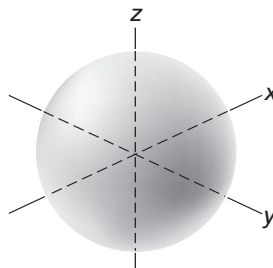
16

Atomic Orbitals

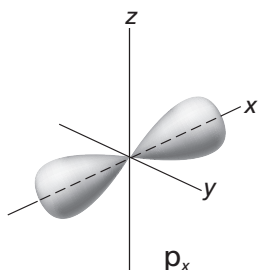
**Use with Chapter 5,
Section 5.2**



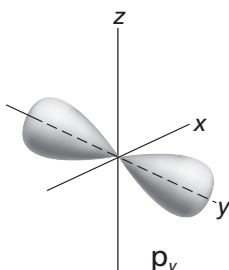
1s orbital



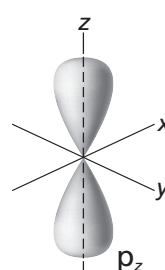
2s orbital



p_x

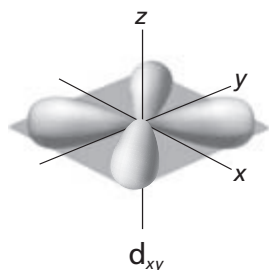


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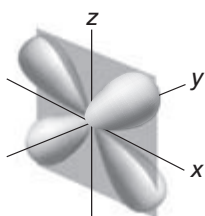


p_z

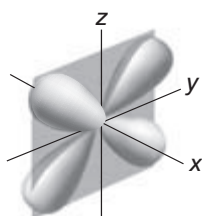
p orbitals



d_{xy}

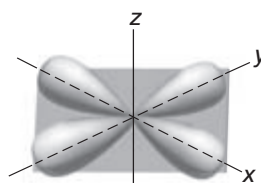


d_{xz}

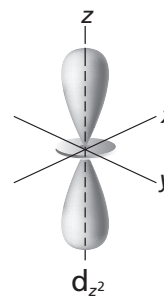


d_{yz}

d orbitals



$d_{x^2-y^2}$



d_{z^2}

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TEACHING TRANSPARENCY WORKSHEET**16****Atomic Orbitals****Use with Chapter 5,
Section 5.2**

1. What is the shape of an s orbital?

2. What is the relationship between the size of an s orbital and the principal energy level in which it is found?

3. What is the shape of a p orbital? How many p orbitals are there in a sublevel?

4. How many electrons can each orbital hold?

5. Look at the diagrams of the p orbitals. What do x , y , and z refer to?

6. How many d orbitals are there in a given sublevel? How many total electrons can the d orbitals in a sublevel hold?

7. Which d orbitals have the same shape?

8. What point in each diagram represents an atom's nucleus?

9. How likely is it that an electron occupying a p or a d orbital would be found very near an atom's nucleus? What part of the diagram supports your conclusion?
