Atomic Orbitals

1s orbital

2s orbital

p orbitals

p_x

p_y

p_z

d orbitals

d_{xy}

d_{xz}

d_{yz}

d_{x^2-y^2}

d_z^2

Use with Chapter 5, Section 5.2
Atomic Orbitals

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?