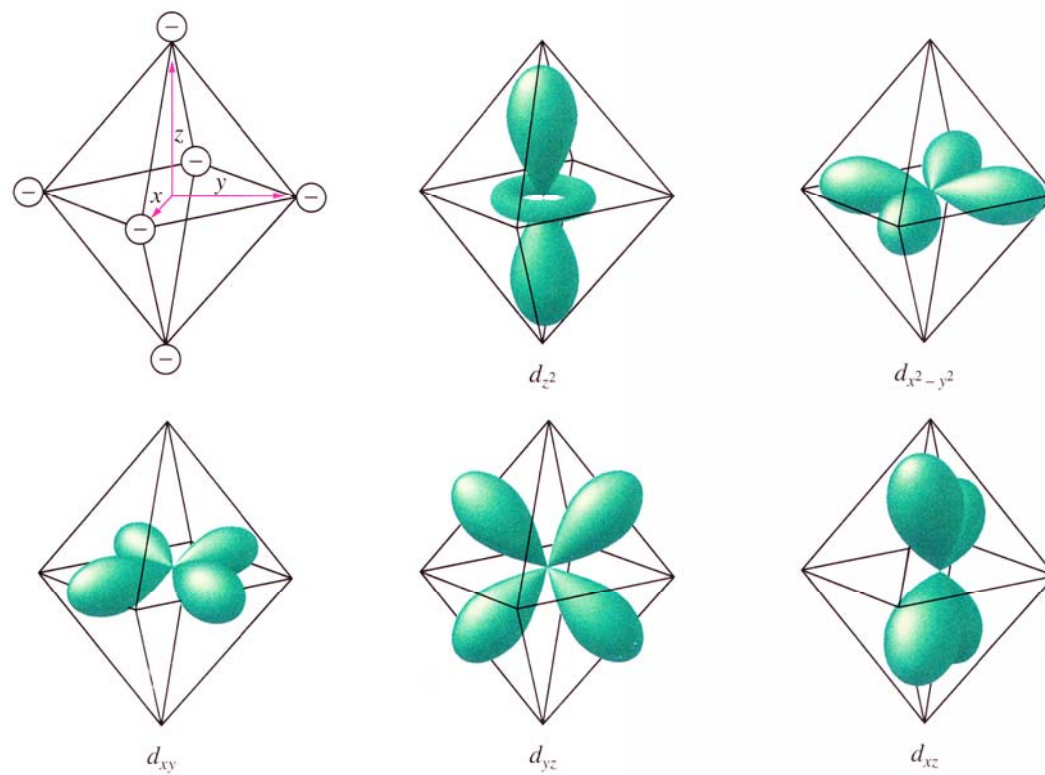


Figures discussed in the videos:

Video (2)



**FIGURE 20.21**

An octahedral arrangement of point-charge ligands and the orientation of the  $3d$  orbitals.

Video (6)

The spectrochemical series:

$\text{CN}^- > \text{NO}_2^- > \text{en} > \text{NH}_3 > \text{H}_2\text{O} > \text{OH}^- > \text{F}^- > \text{Cl}^- > \text{Br}^- > \text{I}^-$

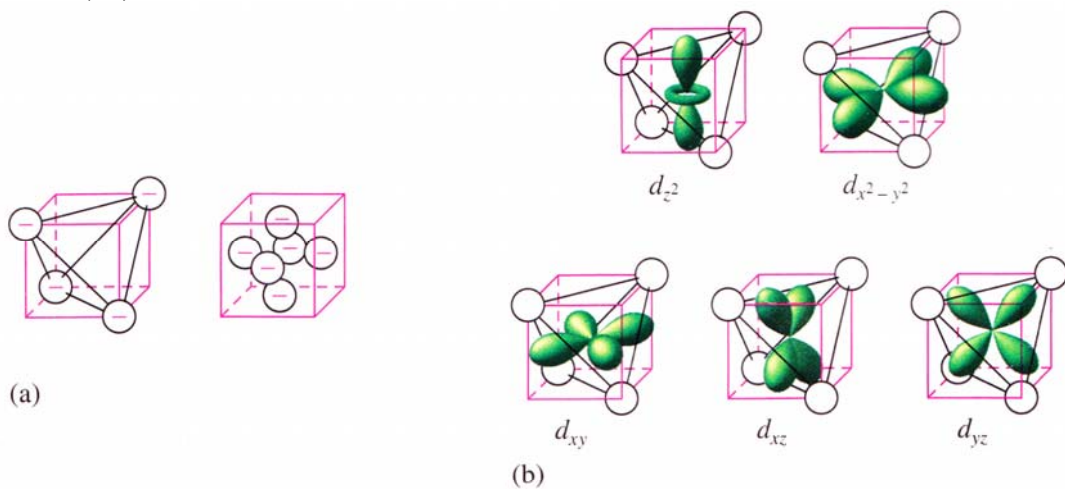
Strong-field ligands

Weak-field ligands

(large  $\Delta$ )

(small  $\Delta$ )

Video (10)



**FIGURE 20.27**

(a) Tetrahedral and octahedral arrangements of ligands shown inscribed in cubes. Note that in the two types of arrangements, the point charges occupy opposite parts of the cube: The octahedral point charges are at the centers of the cube faces, while the tetrahedral point charges occupy opposite corners of the cube. (b) The orientations of the 3d orbitals relative to the tetrahedral set of point charges.