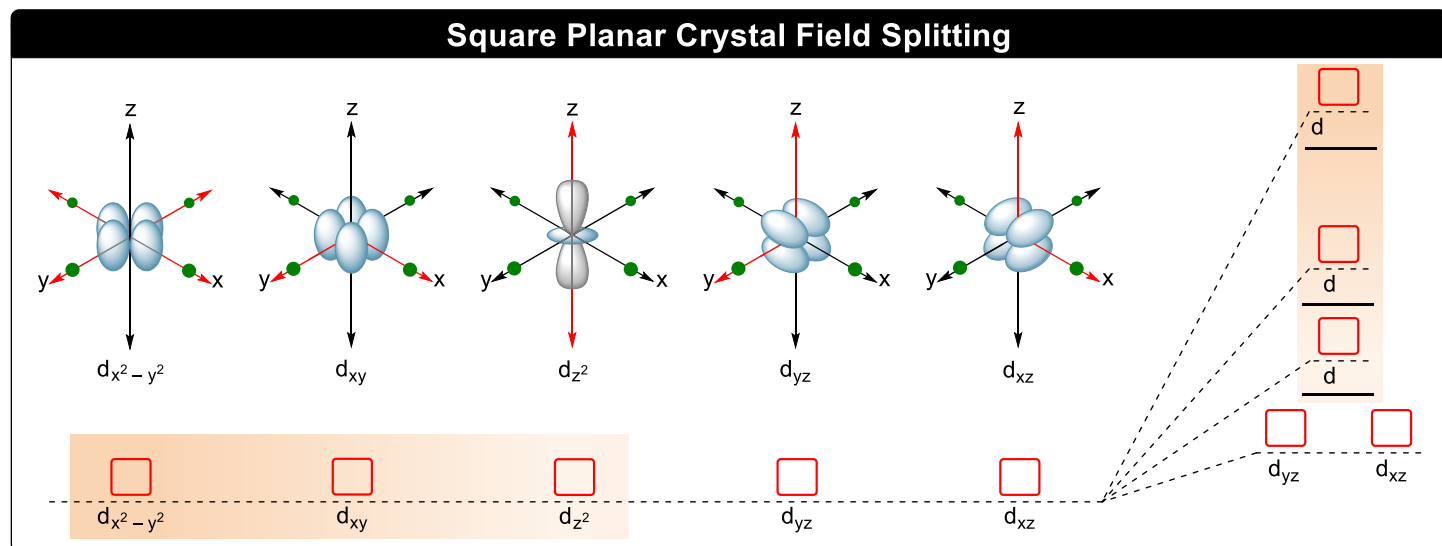


CONCEPT: CRYSTAL FIELD THEORY: SQUARE PLANAR COMPLEXES

- Square planar complexes show the most complex splitting pattern.
- Orbitals on and in-between the ____ and ____ axes have the strongest interactions with the ligands.



- Square planar complexes have the _____ Δ values.

EXAMPLE: Which one of these complexes shows the most complex splitting pattern energy?

- $[\text{CdCl}_4]^{2-}$
- $[\text{Sc}(\text{en})_3]^{3+}$
- $[\text{Ni}(\text{NH}_3)_4]^{2+}$
- $[\text{Fe}(\text{NH}_3)_3(\text{H}_2\text{O})_3]^{3+}$

PRACTICE: Which of the following complexes will have the largest crystal field splitting energy?

- $[\text{Co}(\text{NH}_3)_6]^{2+}$
- $[\text{Cr}(\text{NH}_3)_3(\text{H}_2\text{O})_3]^{2+}$
- $[\text{ZnCl}_4]^{2-}$
- $[\text{Ni}(\text{CN})_4]^{2-}$