

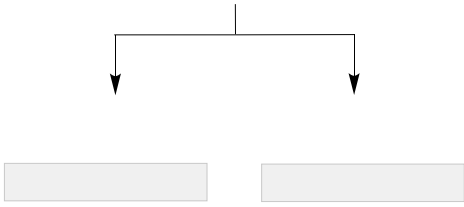
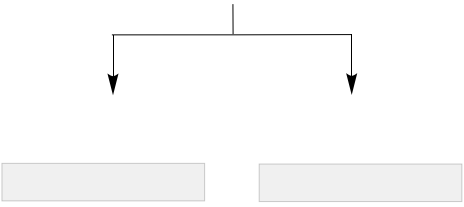
CONCEPT: COORDINATION COMPLEXES

- Ionic compounds composed of a _____ ion connected to a _____ to maintain neutrality.

□ **Recall:** The ionic compound is written as _____ + _____.

- In Coordination Complex I, the complex ion = _____ and is written first.

- In Coordination Complex II, the complex ion = _____ and is written second.

Coordination Complexes	
Coordination Complex I	Coordination Complex II
$[\text{Ni}(\text{NH}_3)_4]\text{Cl}_3$ 	$\text{Li}_2[\text{TiBr}_4]$ 

EXAMPLE: Determine the formula for the coordination complex created between $[\text{Cr}(\text{CN})_2(\text{OH})_2]^{2+}$ and F^- .

PRACTICE: Correctly label all the components of the coordination complex: $[\text{Mn}(\text{NH}_3)_4\text{Cl}_2]\text{Br}$.

- a) Mn is the metal cation, NH_3 and Br are the ligands, and Cl is the counterion.
- b) Mn is the metal anion, Cl and Br are the ligands, and NH_3 is the counterion.
- c) Mn is the metal cation, NH_3 and Cl are the ligands, and Br is the counterion.
- d) Mn is the metal atom, NH_3 and Cl are the ligands, and Br is the counterion.
- e) Mn is the metal atom, NH_3 and Br are the ligands, and Cl is the counterion.

PRACTICE: Which of the following statements is/are true about the coordination complex of: $\text{Na}_2[\text{SnCl}_6]$.

- I) The coordination complex contains 8 ligands.
- II) The metal cation of the complex ion has an overall charge of +6.
- III) The sodium ion represents the counterion.
- IV) The complex ion has an overall charge of -2.

- a) I only
- b) II and III
- c) I, III, and IV
- d) III and IV
- e) IV only