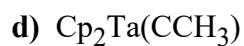
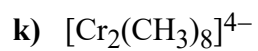
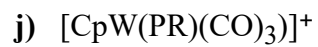
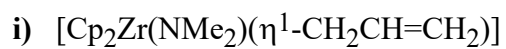
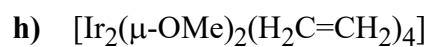
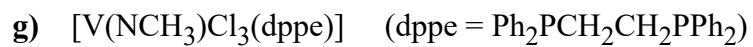
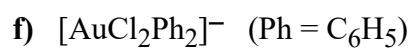


Problem set 1

1. Sketch out the structure of the following transition metal complexes as accurately as possible and clearly show the electron counting (including the oxidation state of the metal center and ligand charges if present). You don't have to draw out phenyl rings on ligands (e.g., for PPh₃).





4. Sketch out a neutral 18-electron structure showing the geometry about the metal center as accurately as you can at this point in the course for the following metals and ligands. Use ***at least one metal and each type of ligand shown***. Try to keep your structure as simple as possible (bimetallic complexes are OK, nothing higher). Clearly show your electron counting. Ligands are shown without charges, please indicate the proper ligand charge and metal oxidation state in your electron counting.

a) Mo, μ -CR₂, dmpe, CO

b) Nb, NMe, NMe₂, Cp, Cl

c) Ru, C₆H₆, H, PMe₃

d) Mn, CH₃, CO