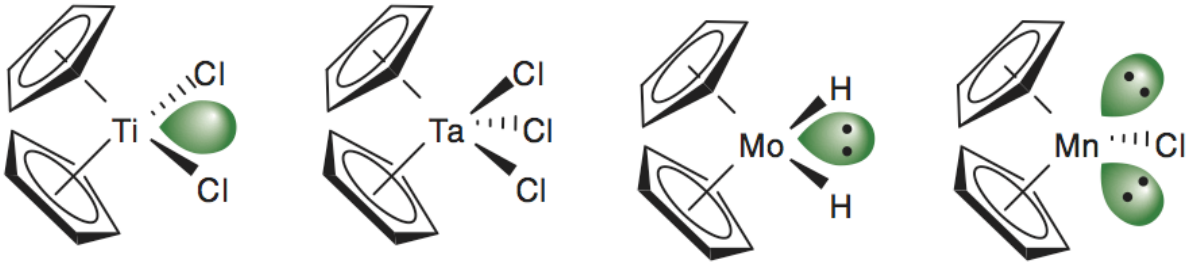
Electron Counting for pi complexes—worksheet September 19, 2017.

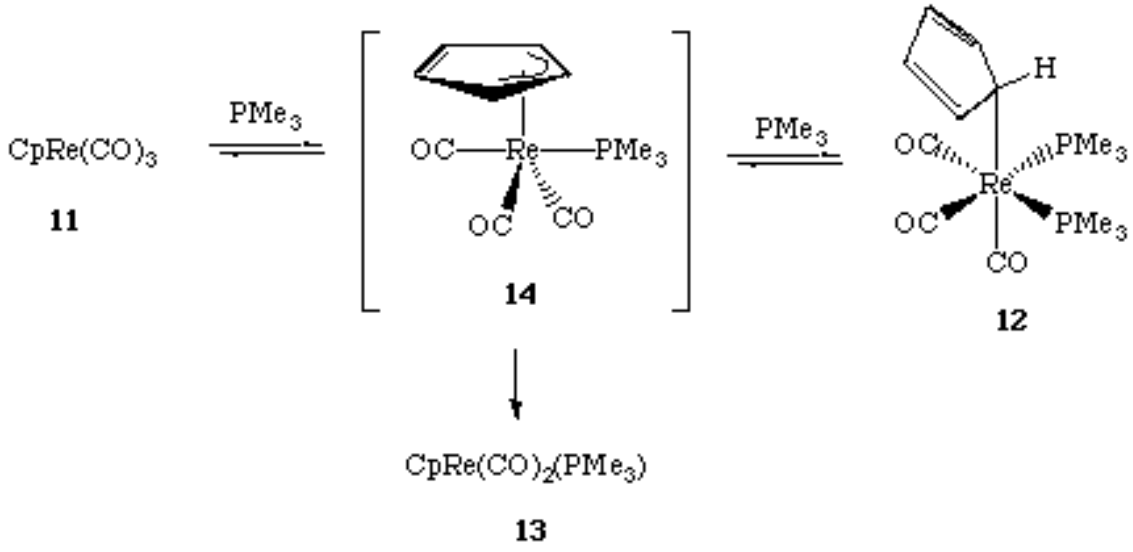
1. Give the electron count for each Mn derivative in the following equation. Show how you derived each overall count.

$$[Mn(CO)_5]^- + C_3H_5Cl \longrightarrow (\eta^1\text{–}C_3H_5)Mn(CO)_5 + Cl^- \xrightarrow{\Delta \text{ or } h\nu} (\eta^3\text{–}C_3H_5)Mn(CO)_4 + CO$$

2. Give the electron count for each of the bent metallocenes.



3. Give the electron count for each Re species.



4. Based on adherence to the 18-electron rule, suggest a structure for ***$(C_5H_5)_2Fe(CO)_2$.***

5. What is the electron count for nickelocene, Cp_2Ni, and the triple decker shown right?