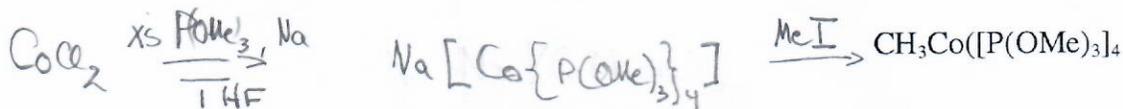
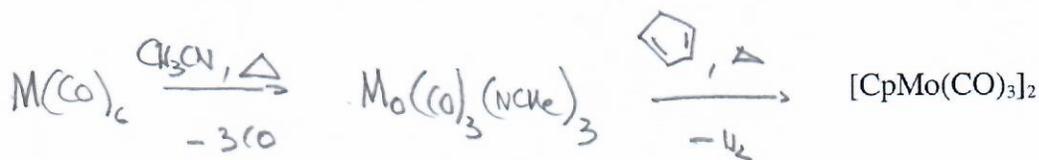


1. Using readily available starting materials (i.e. metal halides or carbonyls and commercially available organic reagents), propose syntheses for the following molecules.

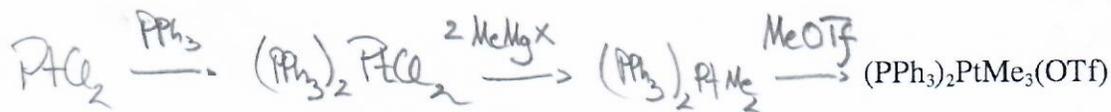
a) Note: There are known routes. Alternatives are possible!



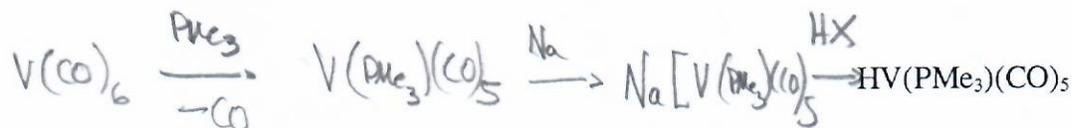
b)



c)



d)



2. Using only readily available starting materials (i.e. metals, metal halides, or homoleptic carbonyls, as well as organic molecules (including lithium alkyls), give plausible synthetic routes to the following organometallic molecules.

