

Due: October 05, 2006

Note: Journals can be found online at the Texas A&M University's website: <http://library.tamu.edu>

- 1) See manuscript by Wanat et al. in *Inorg. Chem.* (2002, 41, 4).
 - Using the temperature dependent rate constants for k_{on} at 0.1 MPa pressure provided in Table 1, calculate the values of ΔH^\ddagger and ΔS^\ddagger for the process.
 - Using the pressure dependent rate constants for k_{on} at 20°C provided in Table 1, calculate the value of ΔV^\ddagger .
 - What mechanistic conclusions can be drawn from the ΔS^\ddagger and ΔV^\ddagger values obtained?

- 2) See manuscript by Bengali in *Organometallics* (2000, 19, 4000).
 - Derive equation 1 for the reaction described in **Scheme 1**.
 - How was the value of k_2/k_{-1} determined, and what does it tell you about the intermediate, $\text{CpMn}(\text{CO})_2(\text{heptane})$?