Problem Set #8 Chem 471 Fall 1999

Due Monday, 12/13/99, in class
(at beginning of in-class help session).

Show your work. Problem sets will be spot graded. Work must be shown.

R = 0.08206 liter atm K^{-1} $mole^{-1}$ = 8.314 J K^{-1} $mole^{-1}$

h = 6.626 x 10^{-34} J s c = 2.9979 x 10^{8} m s^{-1}

1. T,S,&W Ch 8 Pb 5

a) Steady state of B tells us that:

$$\frac{dB}{dt} = 0 = k_1 A - k_2 B - k_3 BC = k_1 A - (k_2 + k_3 C)B$$

$$B = \frac{k_1}{k_2 + k_3 C} A$$

$$\frac{dD}{dt} = k_3 BC = \frac{k_1 k_3}{k_2 + k_3 C} AC$$

2. T,S,&W Ch 8 Pb 6

3. T,S,&W Ch 8 Pb 19, parts (a), (b), (c), and (e)