Show your work on numerical problems to receive any credit. This homework is due on Wednesday, April 25, 2007.

(6) 1. What is the cell potential of the cell:

\[ 3 \text{Ce}^{4+} (aq) + \text{Cr} (s) \rightarrow 3 \text{Ce}^{3+} (aq) + \text{Cr}^{3+} (aq) \]

a. under standard conditions.

b. if the [Ce^{4+}] = 0.100 M, [Ce^{3+}] = 0.200 M, and [Cr^{3+}] = 0.150 M.

c. Find the equilibrium constant for the reaction.

(4) 2. Gilroy wants to chrome-plate something and runs a current of 9.50 A for a period of 1 hour and ten minutes. How much Cr^{3+} will be converted to Cr through this process?