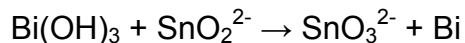
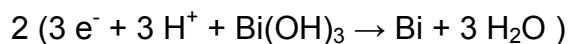


Name _____ KEY _____ Section _____ chm152 Quiz 9

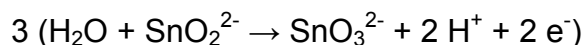
1) (6 pts) Balance the following equation in a basic solution. **You must show EACH half reaction and all steps.**



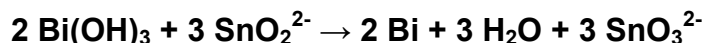
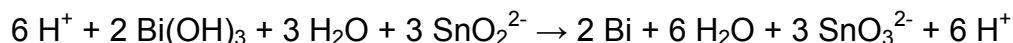
Half Reaction 1:



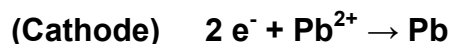
Half Reaction 2:



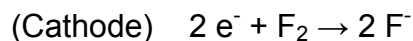
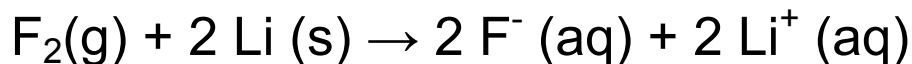
Balanced Total Equation:



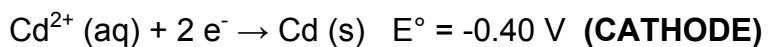
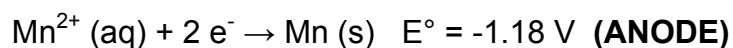
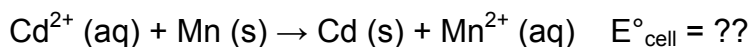
2) (4 pts) Use the following galvanic cell notation to write out the balanced individual half reactions, label which reaction is the anode and which is the cathode.



3) (2 pts) For the galvanic cell made from the following reaction, label which half reaction corresponds to the anode and which corresponds to the cathode.



4) (4 pts) Calculate the potential for the following galvanic cell. $E^\circ_{\text{cell}} = E^\circ_{\text{cathode}} - E^\circ_{\text{anode}}$



$$E^\circ_{\text{cell}} = (-0.40 \text{ V}) - (-1.18 \text{ V}) = +0.78 \text{ V}$$

5) (4 pts) A given cell has $E^\circ_{\text{cathode}} = -0.57 \text{ V}$ and $E^\circ_{\text{anode}} = -0.28 \text{ V}$. Can this cell be used to do work? Explain, use math and words please!!

$$E^\circ_{\text{cell}} = (-0.57 \text{ V}) - (-0.28 \text{ V}) = -0.29 \text{ V}$$

This cell can NOT do work. The NEGATIVE value for E°_{cell} implies that this is NOT a spontaneous reaction, only spontaneous reactions can do work.