

Electrochemistry : Online Tutorial Question Form

Name: _____ Lab ID: _____

1. (Step 3: Practice with standard cell potentials)

Use the simulation to determine the half-cell potential for the metal "X".

a. **What is the balanced half-cell reaction corresponding to the reduction of metal X?**

b. **What cell potentials did you measure, to help determine the half-cell reduction potential for metal X, and what values did you obtain (list two different cells, and the measured potential)?**

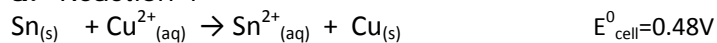
c. **What value did you obtain for the half cell reduction potential of metal X?**

d. **As a check on your answer, use your above value for the half-cell reduction potential of X to calculate the potential of the two cells you measured in part b. Your predicted values should agree with what you measured in part b.**

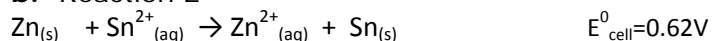
2. (Step 4: Practice with Non-standard conditions)

Dilute the Sn²⁺ solution in the following two galvanic cells. What happens to the voltage in each? Explain your results.

a. Reaction 1



b. Reaction 2



3. **Consider a cell: $\text{Zn}_{(s)} + \text{Cu}^{2+}_{(aq)} \rightarrow \text{Zn}^{2+}_{(aq)} + \text{Cu}_{(s)}$ in which the concentration of $[\text{Cu}^{2+}]$ and $[\text{Zn}^{2+}]$ are both 2M.** [Note that the simulation does not provide solutions above 1M. Please make predictions about cells with 2M concentrations based upon experiments you perform with the concentrations provided.]

a) **Will the cell potential be greater than, equal to or less than the standard cell potential?**

b) **Will the cell be able to run the stopwatch for a longer time, equal time, or shorter time than the standard cell.**