# Worksheet #1

**Name:** _____ **Period:** _____ **Seat#:** _____

**Directions:** Use a reduction potential chart.
Find and copy the reduction equations for $Ag^+ \rightarrow Ag^0$ and $Pb^{2+} \rightarrow Pb^0$ and then answer the following questions regarding these equations.

| | |
|---|---|
| Silver reduction equation: | Potential Value:<br>$E° =$ |
| Lead reduction equation: | Potential Value:<br>$E° =$ |

| | |
|---|---|
| **1)** Which metal ion has the greater reduction potential? | **2)** If these two metals (and their solutions) were used to create a galvanic cell, which metal would be the anode? |
| **3)** Write the reaction at the anode: | **4)** Write the reaction at the cathode: |
| **5)** What is the overall reaction? | **6)** What would be the voltage of the standard electrochemical cell? |
| **7)** How many moles of electrons are involved in this reaction? n = | **8)** Find and copy down the Nernst Equation: |

**9)** If the standard cell is allowed to run until the $[Ag^+] = 0.50$ M, the $[Pb^{2+}] = 2.0$ M, the cell voltage will be _____ (greater / less)? Justify your answer by comparing K and Q and explaining what that shows you.

**10)** Use the Nernst equation to calculate the cell voltage with these new concentrations Did the cell voltage change in the direction you predicted in #9 ?