

Name:

Date:

Period:

Seat #:

Show all work

Consider the reduction potential chart. Find and copy the reduction equations for  $\text{Ag}^+ \rightarrow \text{Ag}^\circ$  and  $\text{Pb}^{2+} \rightarrow \text{Pb}^\circ$

|                            |                                       |
|----------------------------|---------------------------------------|
| Silver reduction equation: | Potential Value:<br>$E^\circ =$ _____ |
| Lead reduction equation:   | Potential Value:<br>$E^\circ =$ _____ |

|  |   |
|--|---|
| 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 $[\text{Ag}^+] = 0.50 \text{ M}$ , the $[\text{Pb}^{2+}] = 2.0 \text{ M}$ , the cell voltage will be _____ (greater / less)? |   |
| 10. Use the Nernst equation to calculate the cell voltage with these new concentrations  |   |