QUICK CHECK #1a

Name: **Date:** **Period:** **Seat #:**

☐ **Balancing Redox Equations**

An acidified solution of potassium dichromate is added to a solution of iron(II) sulfate.

Aluminum metal is added to a strongly basic solution of sodium hydroxide forming bubbles of hydrogen gas and the complex ion, $Al(OH)_4^-$.

☐ **Electrolysis Reactions**

Use your Reduction Potential Chart to determine the reaction at the anode, reaction at the cathode, and the overall reaction during the electrolysis of a solution of copper(II) chloride.

☐ **Electrolysis Stoichiometry**

A current of 2.50 amps is passed through a solution of $Ni(NO_3)_2$ for 2.00 hours.
What mass of Ni metal is deposited?

☐ **Predicting Spontaneous (Product-Favored) Reactions**

State whether each reaction below is product-favored or not. Use your reduction potential chart.

____ $Br_2 + 2Cl^- \rightarrow Cl_2 + 2Br^-$

____ $Cu^{2+} + 2I^- \rightarrow I_2 + Cu$

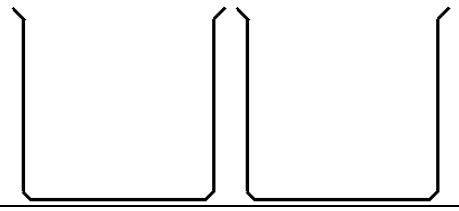
____ $2Au^{3+} + 3Zn \rightarrow 3Zn^{2+} + 2Au$

☐ **Electrochemical Cell**

Sketch the cell made from Au in a 1.0 M solution of gold(III) nitrate and Zn in a 1.0 M solution of Zn(II) sulfate.

$Au^{3+} + 3e^- \rightarrow Au(s)$ +1.50

$Zn^{2+}(aq) + 2e^- \rightarrow Zn(s)$ -0.763

Anode Reaction	Sketch the Cell	Cathode Reaction
		

Overall Reaction & E° (volts)

☐ **Non-Standard Electrochemical Cell**

Calculate the voltage of the above cell if the $[Au^{3+}] = 5.00$ M and $[Zn^{2+}] = 0.100$ M.

☐ **Alkali Metal in Water**

Write the balanced chemical equation for the reaction of potassium metal dropped into water.

☐ **Oxidation-Reduction of Alkali Metals in Water**

Which element in the chemical equation above, was oxidized and which element was reduced?

_____ was oxidized and was the _____agent

_____ was reduced and was the _____agent

☐ **Electrolysis of Water**

Write the balanced chemical equation for the electrolysis (or decomposition) of water.

What are the two **half-reactions** for this overall reaction, showing the reduction and the oxidation?

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