

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, $\text{Al}(\text{OH})_4^-$.

Electrolysis Reactions

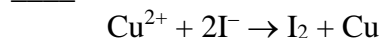
Use your Reduction Potential Chart to determine the reaction at the anode, reaction at the cathode, and the overall reaction during the electrolysis of a solution of copper(II) chloride.

Electrolysis Stoichiometry

A current of 2.50 amps is passed through a solution of $\text{Ni}(\text{NO}_3)_2$ for 2.00 hours.
What mass of Ni metal is deposited?

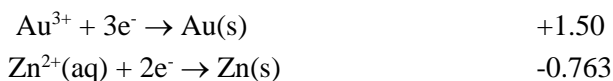
Predicting Spontaneous (Product-Favored) Reactions

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



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.



Anode Reaction	Sketch the Cell	Cathode Reaction
Overall Reaction & E° (volts)		

Non-Standard Electrochemical Cell

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

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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