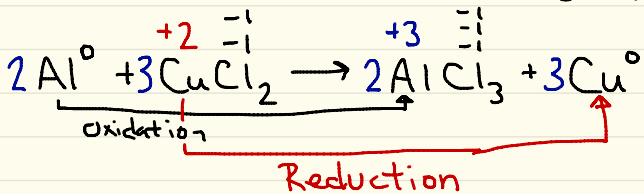
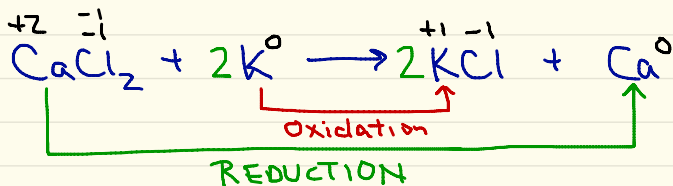


UNIT 11 - TOPIC 1



Al^0 is the species being oxidized.
 Cu^{2+} is the species being reduced.



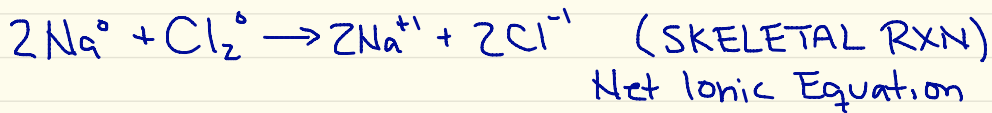
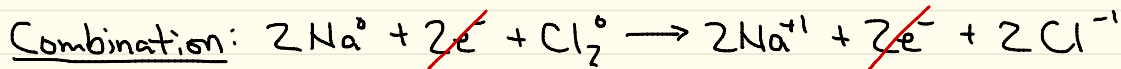
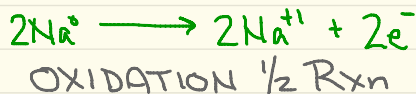
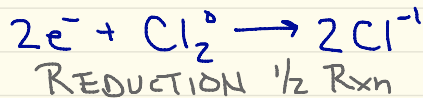
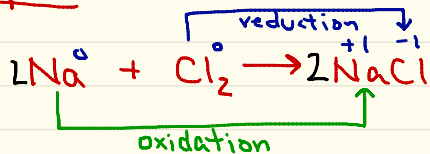
Ca^{+2} is being reduced.
 K^0 is being oxidized.

1. Assign oxidation state.
2. Is it a REDOX Rxn?
3. Balance the equation
4. Determine what is oxidized and what is being reduced.

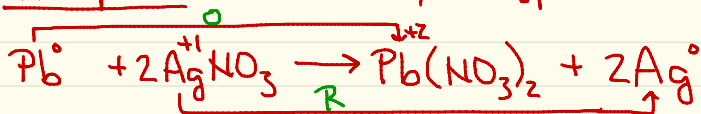
1. Assign Oxidation states and determine species oxidized and reduced.
 2. Write $\frac{1}{2}$ reaction for oxidation.
(electrons on the RIGHT)
 3. Write $\frac{1}{2}$ reaction for reduction.
(electrons on the LEFT)
 4. # e^- gained = # e^- lost
 5. Combine $\frac{1}{2}$ rxns to write the 'net ionic equation' or 'Skeletal rxn'.
- ** Make sure equation is balanced. **

UNIT 11- TOPIC 2

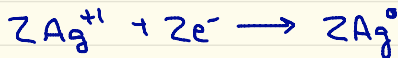
Example #1 Write the half reactions and balanced skeletal reaction.



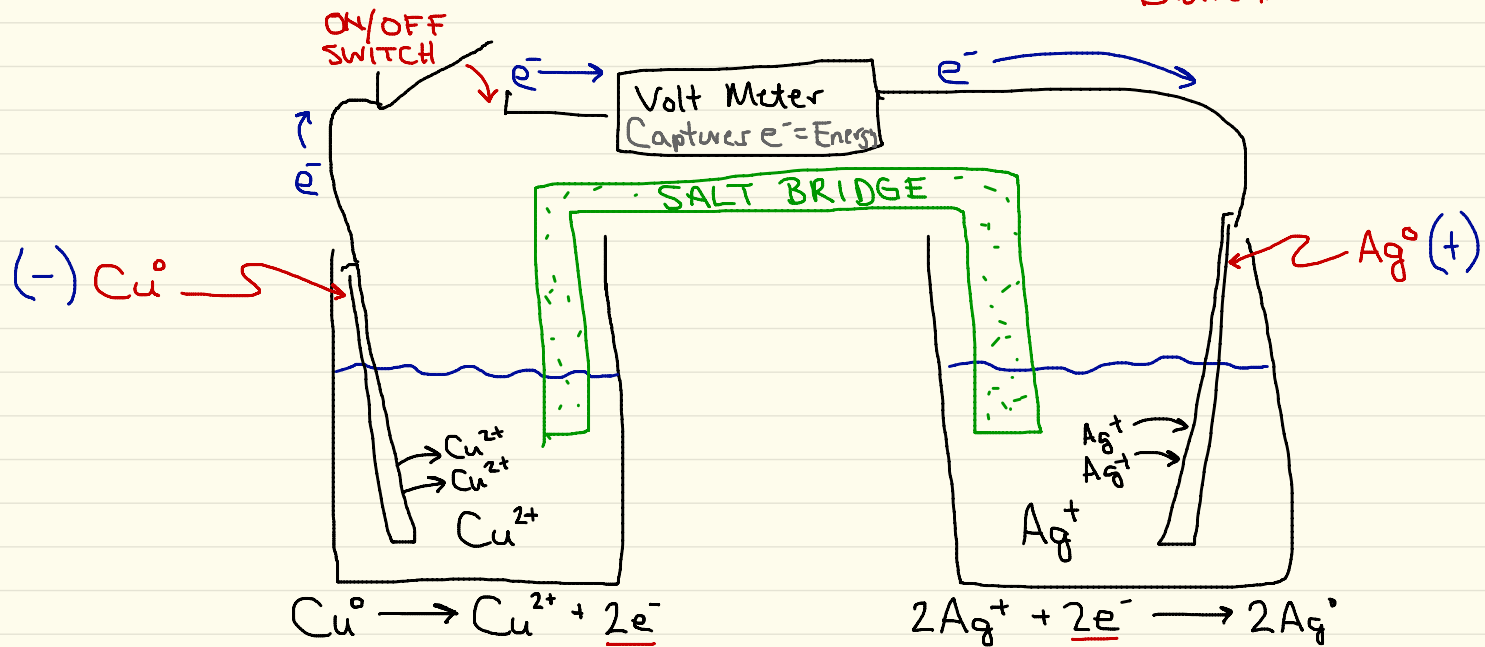
Example #2 ** Identify the spectator ion **



NO_3^{-1} (spectator ion)



VOLTAIC CELL → MAKES ENERGY "Exothermic"



OXIDATION SMALLER ANODE
"Annie the Ox"

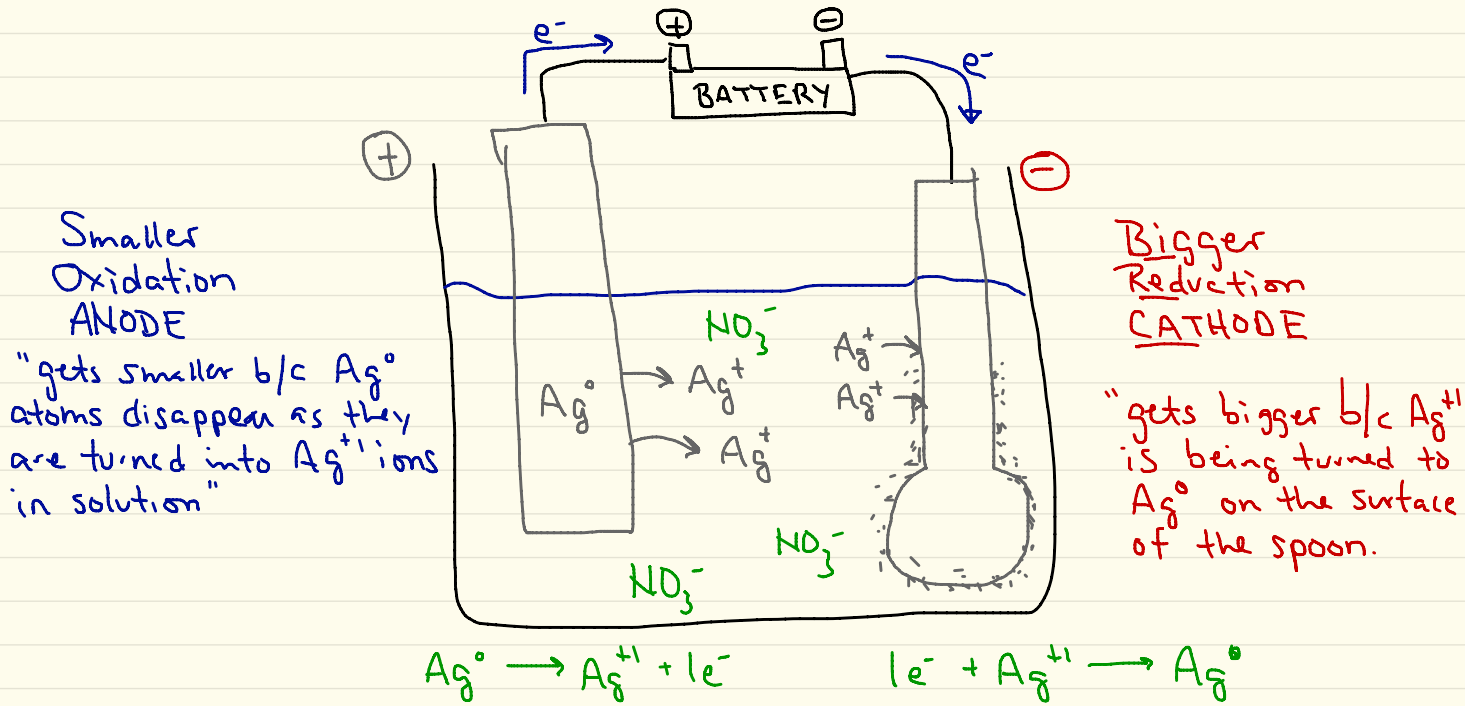
* this electrode disappears as Cu° is converted to Cu^{2+} as e^{-} are lost.

REDUCTION BIGGER CATHODE
"CATHY the RED-neck"

* this electrode gets bigger as Ag^{+} ions turn to Ag° atoms as e^{-} are gained.

** Spontaneous Reaction b/c Cu° atom is higher than Ag^{+} ion on Table J. **

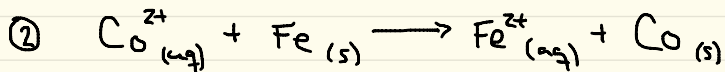
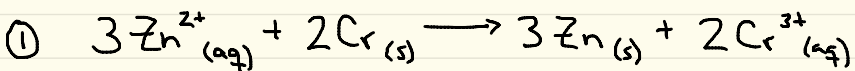
Electrolytic Cell \Rightarrow Uses Energy (Endothermic)



* Rxn NOT spontaneous \Rightarrow LOOK FOR A BATTERY or POWER Source in the picture (necessary)

Table J Practice Problems - METAL REACTIVITY

DETERMINE IF THE FOLLOWING ARE SPONTANEOUS



③ Based on the positions of **zinc** and **iron** on table J, explain how attaching zinc blocks to a steel ship hull protects the steel from corrosion.