

## **Balancing Oxidation/Reduction Reactions by the Half Reaction Method**

(Silberberg pp 897-898)

1. Divide the reaction into half reactions.
2. Balance each half reaction separately:
  - (a) balance all elements except H and O
  - (b) balance O by adding  $\text{H}_2\text{O}$
  - (c) balance H by adding  $\text{H}^+$
  - (d) balance charge by adding electrons
3. Multiply each half reaction by an integer so both have equal number of electrons.
4. Add half reactions together and cancel.
5. Check.
6. If in base, add  $\text{OH}^-$  to both sides to neutralize  $\text{H}^+$ .