

## Predicting Reactions – AP Chemistry

Neutral Metals + Non Oxidizing Acids (HCl, H<sub>2</sub>SO<sub>4</sub>) → Metal (Cl/ SO<sub>4</sub>) + H<sub>2</sub>

Neutral Metals + Oxidizing Acids (HNO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub>) → NO/NO<sub>2</sub>(depending on conc or dilute) + H<sub>2</sub>O + Metal Ion

Neutral Metals + H<sub>2</sub>O → Metal Ion + OH<sup>-</sup> + H<sub>2</sub>

Neutral Metals + Ionized Metals → Switch charges

Neutral Metals + Hot Concentrated H<sub>2</sub>SO<sub>4</sub> → Metal (SO<sub>4</sub>) + SO<sub>2</sub> + H<sub>2</sub>O

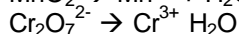
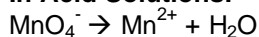
Neutral Metals + HNO<sub>3</sub> → NO or NO<sub>2</sub> (depending on dilute or concentrated) + H<sub>2</sub>O

Metal Oxide + H<sub>2</sub>O → Metal Hydroxide (add OH<sup>-</sup>)

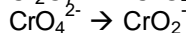
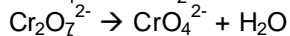
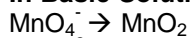
Non-Metal Oxide + H<sub>2</sub>O → Acid

### Oxidizers

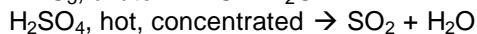
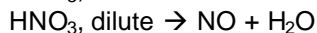
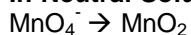
#### In Acid Solutions:



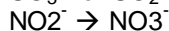
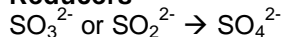
#### In Basic Solutions:



#### In Neutral Solutions (Anything that doesn't specify basic or acidic and doesn't contain acids/bases)



### Reducers



Know all solubility rules, which elements turn to gases, strong acids/bases

H's and OH's usually form water, CO<sub>2</sub> is USUALLY Lewis,

Remember, Double Replacement, Single Replacement, Synthesis, and that one where you split it apart

There are going to be least 1 – 2 metathesis reactions. THESE ARE 6 FREE POINTS FOR YOU. You cannot afford to lose points on metathesis. Hopefully, there will be three. Then, you'll have to guess on one, then on the last one, just get the reactants, and hopefully one of the products. This way, you can get 14/15. Here are some classic examples:

Concentrated Hydrochloric acid solutions is added to solid manganese(IV) oxide and the reactants are heated

