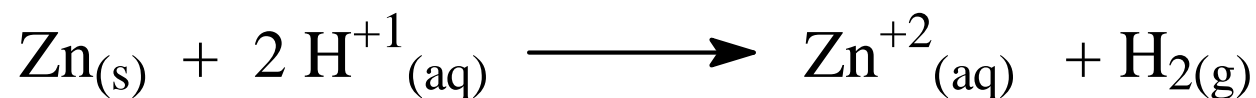


Oxidation/Reduction Reactions

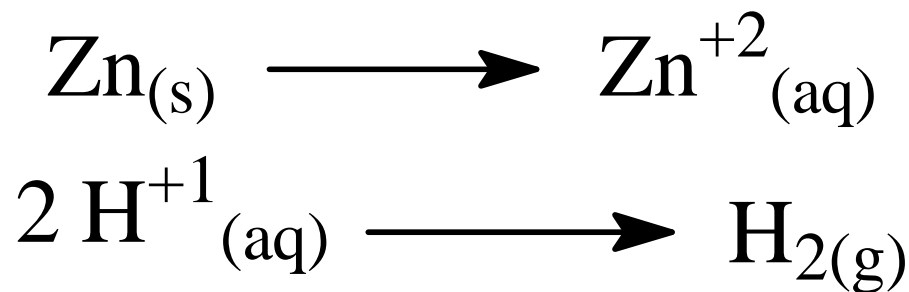
“redox reactions”

involves the transfer of electrons from one species to another

recall the net ionic equation:



separate into "half reactions"



Definitions

Oxidation- loss of electrons

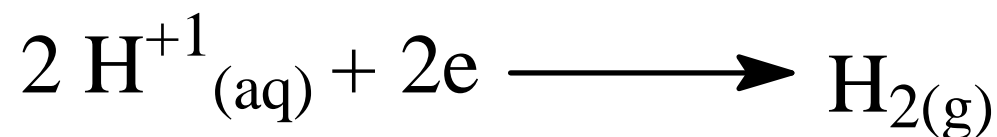
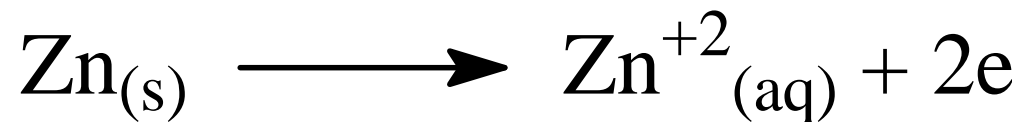
(species becomes more positive or less negative)

Reduction- gain of electrons

(species becomes less positive or more negative)

Q1

label the half reactions



Q2

Do aluminum + sulfuric acid

Assigning Oxidation Numbers

Rules:

1. the sum of all oxidation numbers is 0 for a compound
(the sum of the numbers for an ion equals the charge of the ion)

2. H is always +1; O is always -2

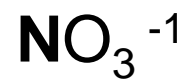
How It Works

What is the oxidation number for S in
 H_2SO_4



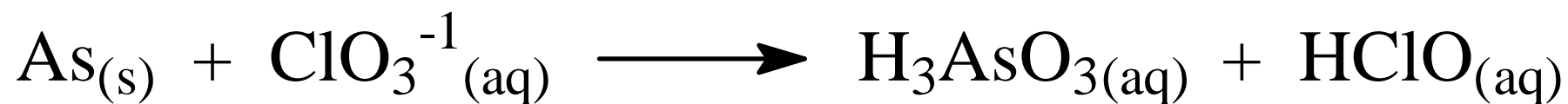
Q3

Assign oxidation numbers to the following bold elements



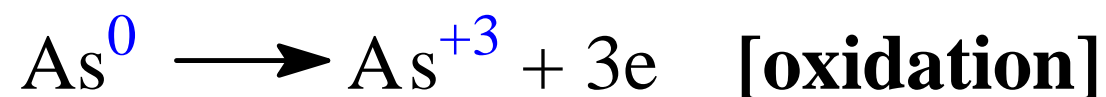
“Complex” Redox Reactions

don't worry about balancing these



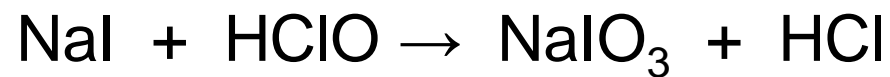
↑
an element

Completing the Problem



Q4

Assign oxidation numbers to the following and write the half reactions.

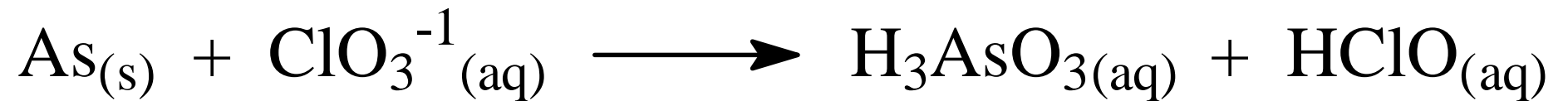


Agents

As^0 could not oxidize if the ClO_3^{-1} wasn't there to accept the electrons, so we call ClO_3^{-1} the **oxidizing agent**

ClO_3^{-1} could not reduce if the As^0 wasn't there to supply the electrons, so we call As^0 the **reducing agent**

Putting it all together



Q5

What are the oxidizing and reducing agents in the equation from Q4?

