

## 419 Balancing more Complex Redox Equations

K - balance key element

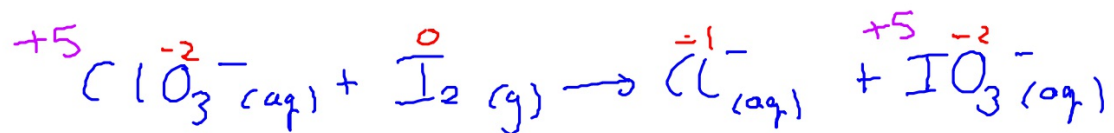
O - balance Oxygen by adding  $H_2O$  to other side

H - balance Hydrogen by adding  $H^+$  to other side

E - balance charge by adding electrons

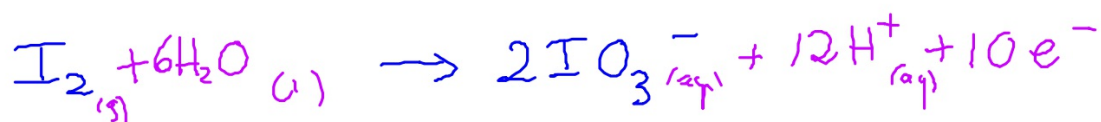
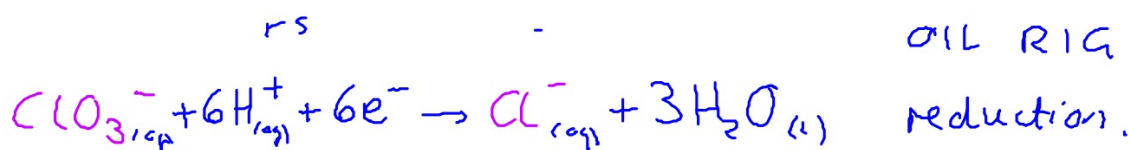
S - states and simplify.

e.g. write half equations for the following: OIL RIG



Cl +5  $\rightarrow$  -1 O.N is reduced  $\rightarrow$  reduction

I 0  $\rightarrow$  +5 O.N is increased  
 $\therefore$  oxidation



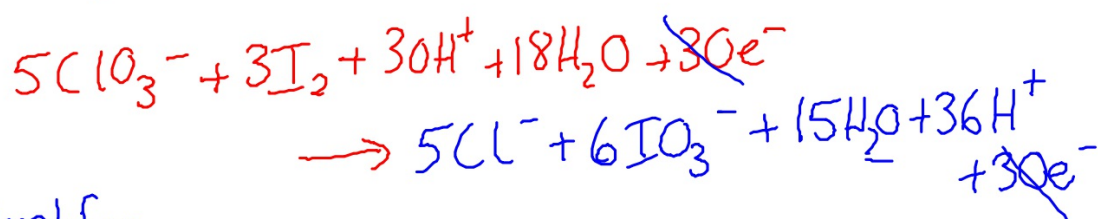
To combine to a full equation:

- ① LOOK AT e<sup>-</sup>s in 2 HALF EQUATIONS
- ② FIND LOWEST COMMON MULTIPLE

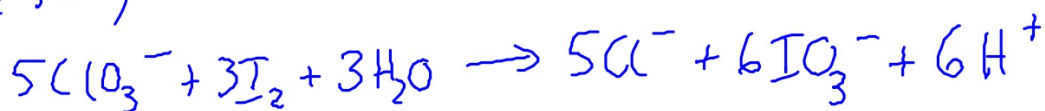
In this case reduction reaction x 5  
 oxidation reaction x 3



combine together:



now simplify:  
( $\text{H}^+$ ,  $\text{H}_2\text{O}$ ,  $\text{e}^-$ )



p 54 student booklet Q 25 easy  
Q 26 harder.