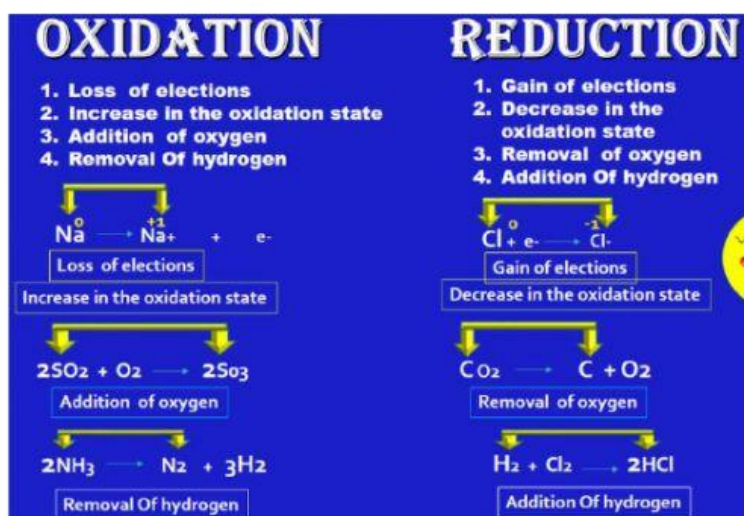


Balancing redox equation (Ion inspection method)

1) Determine species undergo oxidation and reduction



2) Separate the half equation

3) Balance the metal at both sides

4) Balance non-metal other than H and O at both sides

5) Balance the O by adding H₂O at the other side of equation

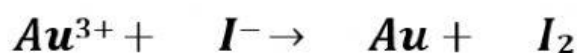
6) Balance the H by adding H⁺ at the other side

7) Balance the charge by adding e⁻ at positive side

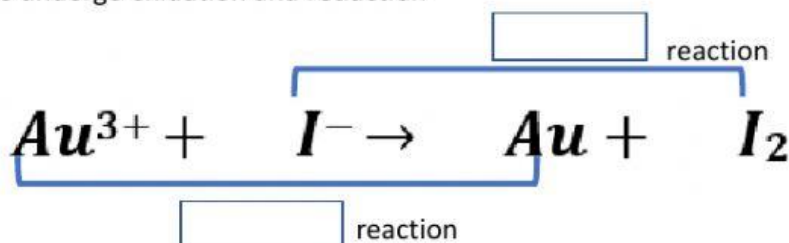
8) Combine both half equations by removing the e from both equations

9) Recheck

Example 2 a) Balance the redox equation



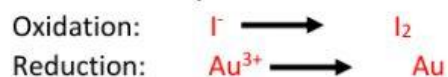
1) Determine species undergo oxidation and reduction



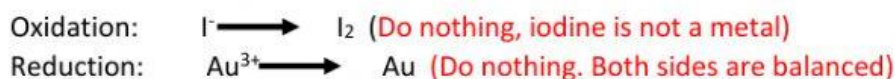
Au³⁺ decreases its oxidation number to 0. Au³⁺ is

I⁻ increases its oxidation number to 0. I⁻ is

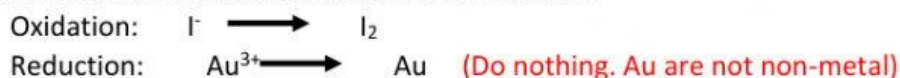
2) Separate the half equation



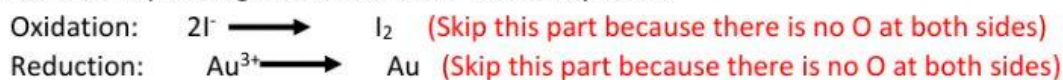
3) Balance the metal at both sides



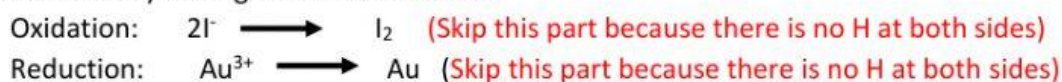
4) Balance non-metal other than H and O at both sides



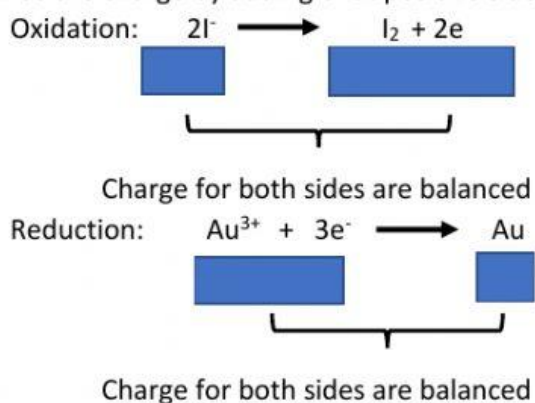
5) Balance the O by adding H_2O at the other side of equation



6) Balance the H by adding H^+ at the other side

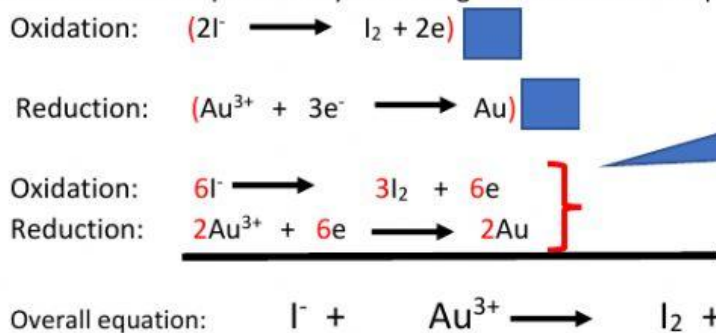


7) Balance the charge by adding e^- at positive side



Initially, it is +3 on the left and 0 at the right hand side. Thus the charge is not balanced.

8) Combine both half equations by removing the e^- from both equations



Both half equations have same number of e^- . Thus, we can get the overall equation

Recheck:

