ELECTROCHEMISTRY: Writing Half-Reactions

Things to Remember (on board)

## Vocabulary: Define the following words using <http://antoine.frostburg.edu/chem/senese/101/glossary.shtml>

**Redox reaction:**

**Oxidation number:**

**Oxidation Half-Reaction:**

**Reduction Half-Reaction:**

**Oxidizing agent:**

**Reducing agent:**

**Spectator Ion:**

How to Write Half-Reactions:

1. Watch 7 minute Video Example: Google 🡪 Chemistry 13.4 Redox 🡪 Click on first video link. Write down the examples in the video for your notes. The YouTube version has captions for the video too.

**OR**

2. Read the Step by Step: Google 🡪 writing ionic equations for redox 🡪 click on first link. Take notes on the steps and only the first example given.

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## Practice Problems

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| **1. Write all of the oxidation numbers (charges) for each species above their symbols.**  **2. Then write the oxidation half-reaction and reduction half-reaction, identify the oxidizing and reducing agents.** |
| Fe + Zn2+ 🡪 Fe2+ + Zn  Oxidation Half-Reaction:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Reduction Half-Reaction:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Reactant Oxidized:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Reactant Reduced:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Oxidizing Agent:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Reducing Agent:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Zn + Cu2+ 🡪 Zn2+ + Cu  Oxidation Half-Reaction:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Reduction Half-Reaction:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Reactant Oxidized:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Reactant Reduced:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Oxidizing Agent:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Reducing Agent:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| H2 + Cl2 🡪 HCl  Oxidation Half-Reaction:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Reduction Half-Reaction:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Reactant Oxidized:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Reactant Reduced:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Oxidizing Agent:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Reducing Agent:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 2 Li + F2 🡪 2 LiF  Oxidation Half-Reaction:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Reduction Half-Reaction:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Reactant Oxidized:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Reactant Reduced:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Oxidizing Agent:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Reducing Agent:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Mg + Cu(NO3)2 🡪 Mg(NO3)2 + Cu  Oxidation Half-Reaction:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Reduction Half-Reaction:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Reactant Oxidized:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Reactant Reduced:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Oxidizing Agent:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Reducing Agent:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

Have your paper signed after completion for credit. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_