

prof
1050

HALF REACTIONS

Name: key
Period: _____ Date: _____

$\begin{array}{ccccccc} & & \swarrow & & \searrow & & \\ \text{oxidation} & 0 & & 0 & & 2+ & 1- \\ \text{Example:} & \text{Mg} & + & \text{Br}_2 & \rightarrow & \text{MgBr}_2 & \\ & & & & & & \\ & & & & & & \\ \text{reduction} & & & & & & \\ & & & & & & \\ \text{oxidation half reaction:} & \text{Mg}^0 & \rightarrow & \text{Mg} & + & 2\text{e}^- & \\ \text{reduction half reaction:} & 2\text{e}^- & + & \text{Br}_2^0 & \rightarrow & 2\text{Br}^- & \end{array}$

Mg = reducing agent
Br₂ = oxidizing agent

OIL RIG
LEO GER

Answer the following questions:

- Oxidation is the (**gain, loss**) of electrons and results in a/an (**decrease, increase**) of the oxidation number. The substance oxidized is the (**oxidizing, reducing**) agent.
- Reduction is the (**gain, loss**) of electrons and results in a/an (**decrease, increase**) of the oxidation number.

Identify the following as an oxidation or reduction.

- R $\text{Cl}_2 + 3\text{e}^- \rightarrow 2\text{Cl}^-$ *gain*
- O $\text{Rb} \rightarrow \text{Rb}^+ + \text{e}^-$ *losses are*
- O $2\text{F}^- \rightarrow \text{F}_2 + 2\text{e}^-$
- R $\text{Al}^{3+} + 3\text{e}^- \rightarrow \text{Al}$

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Identify the following as an oxidation or reduction.

- _____ $\text{Cl}_2 + 3\text{e}^- \rightarrow 2\text{Cl}^-$
- _____ $\text{Rb} \rightarrow \text{Rb}^+ + \text{e}^-$
- _____ $2\text{F}^- \rightarrow \text{F}_2 + 2\text{e}^-$
- _____ $\text{Al}^{3+} + 3\text{e}^- \rightarrow \text{Al}$

