Happy Universal Children's Day!

# Warm-Up Questions

Complete and balance the following reactions:

a) copper (II) sulfate -->

$Cu^{2+}$ $SO_4^{2-}$

$CuSO_4 \rightarrow Cu + S + 2O_2$

b) calcium + chlorine -->

$Ca^{2+}$ $Cl^-$

$Ca + Cl_2 \rightarrow CaCl_2$

# Homework Questions?

$2CuO \rightarrow 2Cu + O_2$ decomp.

# Chemical Reactions

## III. Combustion Reaction

**A complete combustion reaction is the burning of a** substance with oxygen to produce the most common oxides of the elements in the substance being burned.

Most Common Oxides:

- Carbon : $CO_{2(g)}$
- Hydrogen: $H_2O_{(g)}$
- Sulfur: $SO_{2(g)}$
- Nitrogen: $NO_{2(g)}$
- A metal: Oxide of metal with most common ion charge

*hint*

Ex. $2C_4H_{10(g)} + 13O_{2(g)} \longrightarrow 8CO_2 + 10H_2O$

$4Fe_{(s)} + 3O_{2(g)} \longrightarrow 2Fe_2O_3$

$Fe^{3+}$ $O^{2-}$

$Fe^{3+}$ $O^{2-}$

$O^{2-}$

$6+$ $6-$

$2CH_3NH_{3(s)} + 7O_{2(g)} \longrightarrow 2CO_2 + 6H_2O + 2NO_2$

# Combustion Reactions

Write a balanced chemical equation for the following combustion reactions:

$2Mg_{(s)} + O_{2(g)} \longrightarrow 2MgO$

$C_{21}H_{24}N_2O_{4(s)} + 27O_{2(g)} \longrightarrow 21CO_2 + 12H_2O + 2NO_2$

# Homework

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