Stoichiometry

- Mole to Mole – Use Mole Ratio
- Mole to Mass – Use Mole Ratio then multiply by Molar Mass
- Mass to Mole – Divide by Molar Mass then use Mole Ratio
- Mass to Mass – Divide by Molar Mass, then Mole Ratio, and finally multiply by the other Molar Mass

$$2Al + 3Pb(NO_3)_2 \rightarrow 3\ Pb + 2Al(NO_3)_3$$

- If 6 moles of lead (II) nitrate react with aluminum, how many moles of aluminum nitrate will be yielded?

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$$2H_2O \rightarrow 2H_2 + O_2$$

- If 12 moles of water decomposes, how many grams of oxygen will be yielded?

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- If 12 moles of water decomposes, how many grams of oxygen will be yielded?

$$3Fe + 4H_2O \rightarrow Fe_3O_4 + 4H_2$$

- If 50 grams of iron oxide are yielded, how many moles of water are needed to react with iron?

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- If 50 grams of iron oxide are yielded, how many moles of water are needed to react with iron?

$2Na + Cl_2 \rightarrow 2NaCl$

- If 100 grams of sodium react with chlorine gas, how many grams of sodium chloride are yielded?

$2Na + Cl_2 \rightarrow 2NaCl$

- If 100 grams of sodium react with chlorine gas, how many grams of sodium chloride are yielded?

$HCl + NaOH \rightarrow NaCl + H_2O$

- If 25 grams of hydrochloric acid react with sodium hydroxide, how many grams of water are yielded?

$HCl + NaOH \rightarrow NaCl + H_2O$

- If 25 grams of hydrochloric acid react with sodium hydroxide, how many grams of water are yielded?

$$C_3H_8 + 5O_2 \rightarrow 3CO_2 + 4H_2O$$

- How many moles of oxygen are needed to produce 12 moles of carbon dioxide?

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- How many moles of oxygen are needed to produce 12 moles of carbon dioxide?

$$C_3H_8 + 5O_2 \rightarrow 3CO_2 + 4H_2O$$

- How many moles of propane are needed to produce 12 moles of water?

$$C_3H_8 + 5O_2 \rightarrow 3CO_2 + 4H_2O$$

- How many moles of propane are needed to produce 12 moles of water?

$$C_3H_8 + 5O_2 \rightarrow 3CO_2 + 4H_2O$$

- How many grams of propane are needed to produce 13.5 moles of carbon dioxide?

$$C_3H_8 + 5O_2 \rightarrow 3CO_2 + 4H_2O$$

- How many grams of propane are needed to produce 13.5 moles of carbon dioxide?