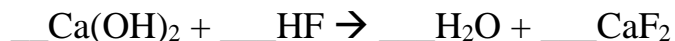


Quiz 3: Classifying Reactions, Stoichiometry - KEY

1. When calcium hydroxide reacts with hydrofluoric acid, water and calcium fluoride are produced.



- a. Write the balanced chemical equation



- b. Classify the type of reaction

Double Replacement

- c. How many moles of hydrofluoric acid are required to react to produce 1.72 moles of water?

$$1.72 \text{ moles H}_2\text{O} \times \frac{2 \text{ moles HF}}{2 \text{ moles H}_2\text{O}} = 1.72 \text{ moles HF}$$

2. A handheld lighter uses butane as its fuel. When butane (C_4H_{10}) is burned in air, it forms carbon dioxide and water.



- a. Write the balanced chemical equation



- b. Classify the type of reaction

Combustion (notice the CO_2 and H_2O on the products side)

- c. If 19.4 moles of oxygen reacted, how many moles of carbon dioxide were produced?

$$19.4 \text{ moles O}_2 \times \frac{8 \text{ moles CO}_2}{13 \text{ moles O}_2} = 11.9 \text{ moles CO}_2$$