## Quiz 3: Classifying Reactions, Stoichiometry

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

$$
\ldots \mathrm{Ca}(\mathrm{OH})_{2}+\ldots \ldots \mathrm{HF} \rightarrow \ldots \mathrm{H}_{2} \mathrm{O}+\ldots \mathrm{CaF}_{2}
$$

a. Write the balanced chemical equation
b. Classify the type of reaction
c. How many moles of hydrofluoric acid are required to react to produce 1.72 moles of water?
2. A handheld lighter uses butane as its fuel. When butane $\left(\mathrm{C}_{4} \mathrm{H}_{10}\right)$ is burned in air, it forms carbon dioxide and water.

$$
\ldots \mathrm{C}_{4} \mathrm{H}_{10}+\ldots \mathrm{O}_{2} \rightarrow \ldots \mathrm{CO}_{2}+\ldots \mathrm{H}_{2} \mathrm{O}
$$

a. Write the balanced chemical equation
$\square$
b. Classify the type of reaction
c. If 19.4 moles of oxygen reacted, how many moles of carbon dioxide were produced?

