Look at your reaction

Are there more REACTANT molecules than products?

YES

SYNTHESIS Reaction

$A + B \rightarrow AB$

$O_2 + CO_2 \rightarrow CO_3$

"Two into one"

NO

Are there more PRODUCT molecules than reactant molecules?

YE

DECOMPOSITION Reaction

$XY \rightarrow X + Y$

$CaCO_3 \rightarrow CaO + CO_2$

"One into two"

NO

Are your REACTANTS something reacting with O_2 gas?

YE

COMBUSTION Reaction

Something + $O_2 \rightarrow$

$CH_4 + 2O_2 \rightarrow CO_2 + 2H_2O$

"If hydrocarbon, always make carbon dioxide and water"

NO

Is there an ELEMENT BY ITSELF that swaps places with an atom in a compound?

YE

SINGLE REPLACEMENT Reaction

$A + BC \rightarrow AC + B$

$Al + Pb(NO_3)_2 \rightarrow Al(NO_3)_2 + Pb$

"Swap cation for cation, **or** anion for anion

NO

Do you switch cations and anions between TWO COMPOUNDS?

YE

DOUBLE REPLACEMENT Reaction

$AB + CD \rightarrow AD + CB$

$AgNO_3 + KCl \rightarrow AgCl + KNO_3$

"Switch cations **and** anions"