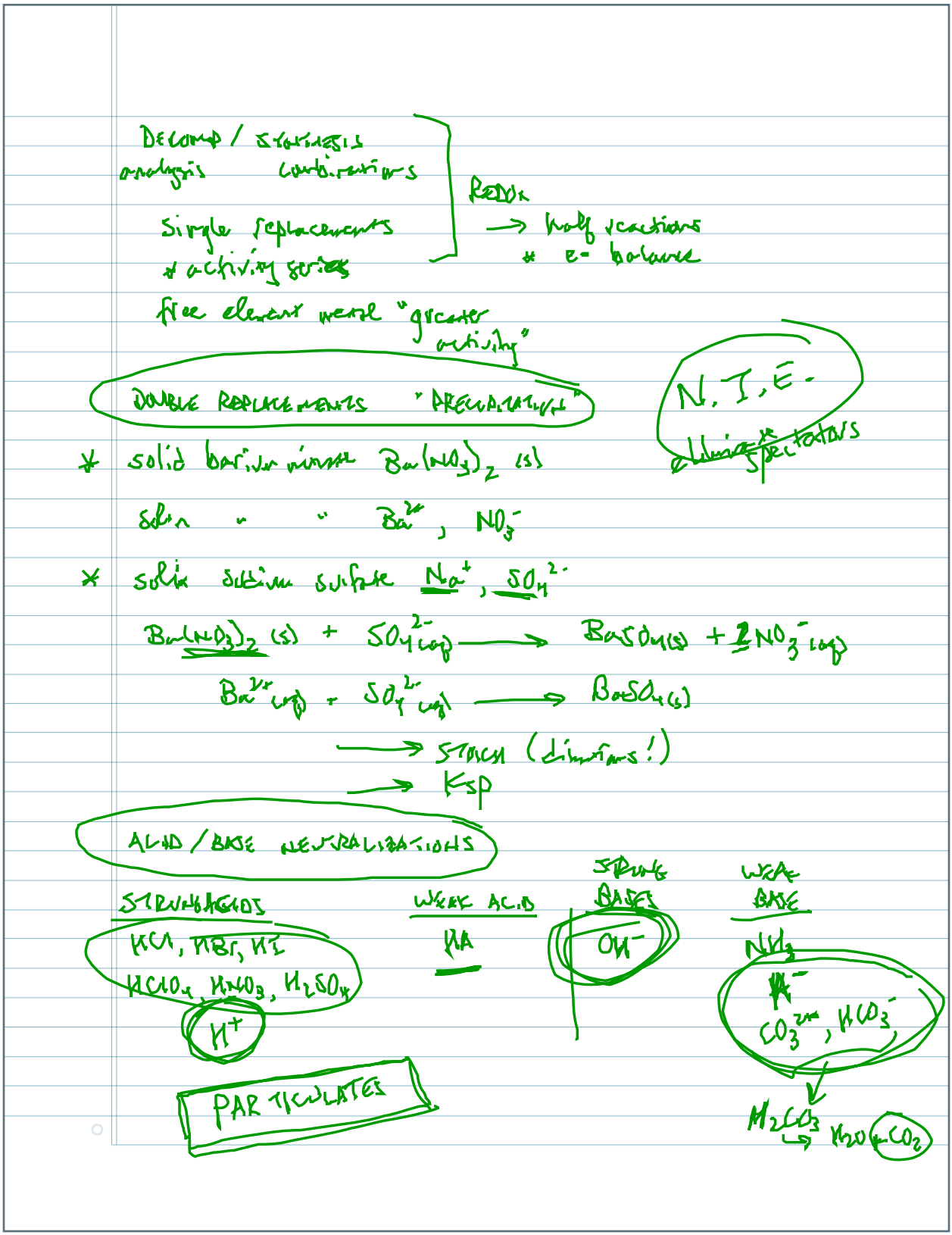

DECOMP / SYNTHESIS
analysis combinations

Single replacements
* activity series

free element weak "greater activity"

REDOX → half reactions
* e⁻ balance

DOUBLE REPLACEMENTS "PRECIPITATIONS"

N.I.E.
Ions * spectators

* solid barium nitrate $Ba(NO_3)_2$ (s)

soln " " Ba^{2+}, NO_3^-

* solid sodium sulfate Na^+, SO_4^{2-}

$Ba(NO_3)_2$ (s) + SO_4^{2-} (aq) → $BaSO_4$ (s) + $2NO_3^-$ (aq)

Ba^{2+} (aq) + SO_4^{2-} (aq) → $BaSO_4$ (s)

→ STOICH (limiting!)

→ Ksp

ACID / BASE NEUTRALIZATIONS

STRONG ACIDS
HCl, HBr, HI
$HClO_4$, HNO_3, H_2SO_4
H^+

WEAK ACID
HA

STRONG BASES
OH^-

WEAK BASE
NH_3
CO_3^{2-}, HCO_3^-
H_2CO_3 → H_2O + CO_2

PARTICULATES