CONCEPT: BORANE REACTIONS

- Reactions are driven by borane's _____ electron-deficiency and diborane's _____ reactivity.
  - □ Will cover 2 types of reactions: reacting with (1) _____ & (2) _____ Reactions.

(1) Reaction with H_2O

- As a result of their _____ reactivity, diboranes readily react with liquid water.
  - □ Gaseous diborane reacts with water to produce _____ acid and hydrogen gas.

Reaction with H_2O

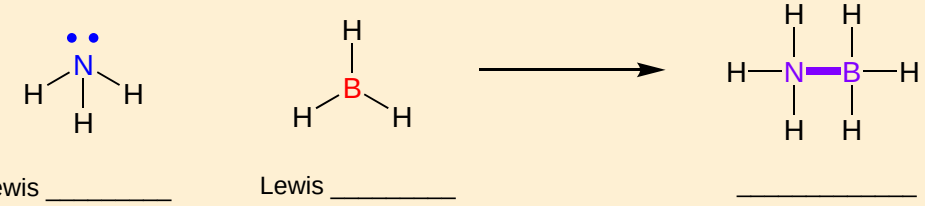
__ B_2H_6 (g) + __ H_2O (l) ⟶ __ H_3BO_3 (s) + __ H_2 (g)

EXAMPLE: If the 466 kJ of energy is released for every mole of diborane reacting with water, how much energy would be released when 150.0 g diborane is submerged into excess water?

(2) Lewis Acid-Base Reaction

- Recall, a Lewis Acid is an electron pair _____ and a Lewis Base is an electron pair _____.
  - □ Boranes because of their _____ electron-deficiency are considered as Lewis _____.

Lewis Acid-Base Reaction



  - □ **Adduct:** _____ of Lewis base and acid reaction.

EXAMPLE: Draw the adduct product formed from the reaction between borane and a hydroxide ion.