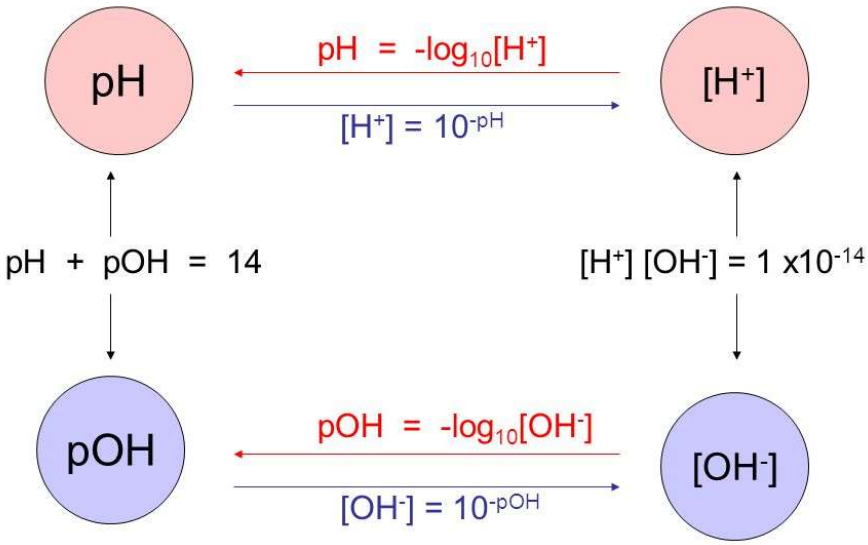
4. pH OF STRONG ACIDS & BASES

UNIT 4 CH40S WIEBE

1

DON'T FORGET…



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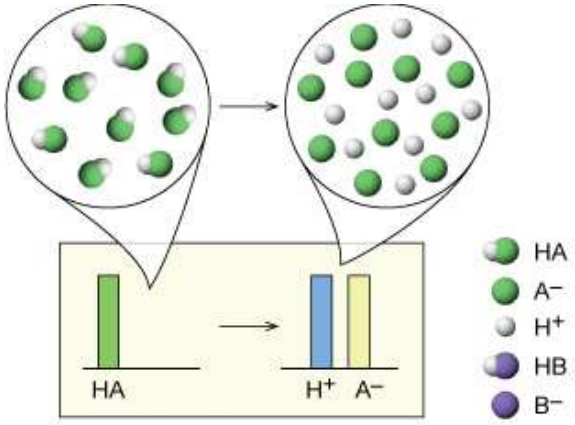
STRONG ACIDS

- Ionize completely in water therefore **not equilibriums.**
- Use B/L or dissociation equation and stoichiometry



$$[H_3O^+] = [ACID]$$

3

HAVE A PLAN OF ACTION!

What type of solution am I dealing with?

Acid — *Base*

What type of acid am I dealing with?

Strong — *Weak*

Use **basic stoichiometry** to determine $[H_3O^+]$ and the 4-corners diagram to determine pH/pOH

Use an **ICE table** to determine $[H_3O^+]$ and the 4-corners diagram to determine pH/pOH

What type of base am I dealing with?

Strong — *Weak*

Use **basic stoichiometry** to determine $[OH^-]$ and the 4-corners diagram to determine pH/pOH

Use an **ICE table** to determine $[OH^-]$ and the 4-corners diagram to determine pH/pOH

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FOR EXAMPLE

Nitric acid is used in the production of agricultural fertilizers, explosives such as TNT, and dyes. Determine pH of a 0.25 M solution of HNO_3.

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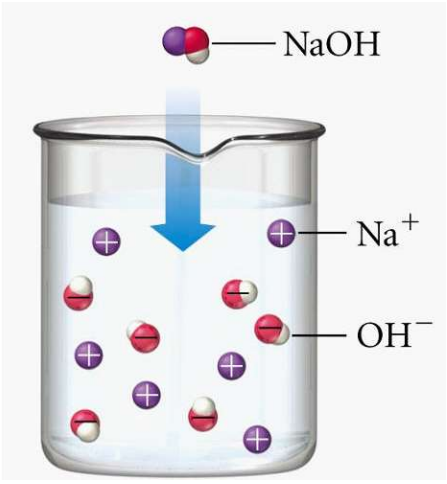
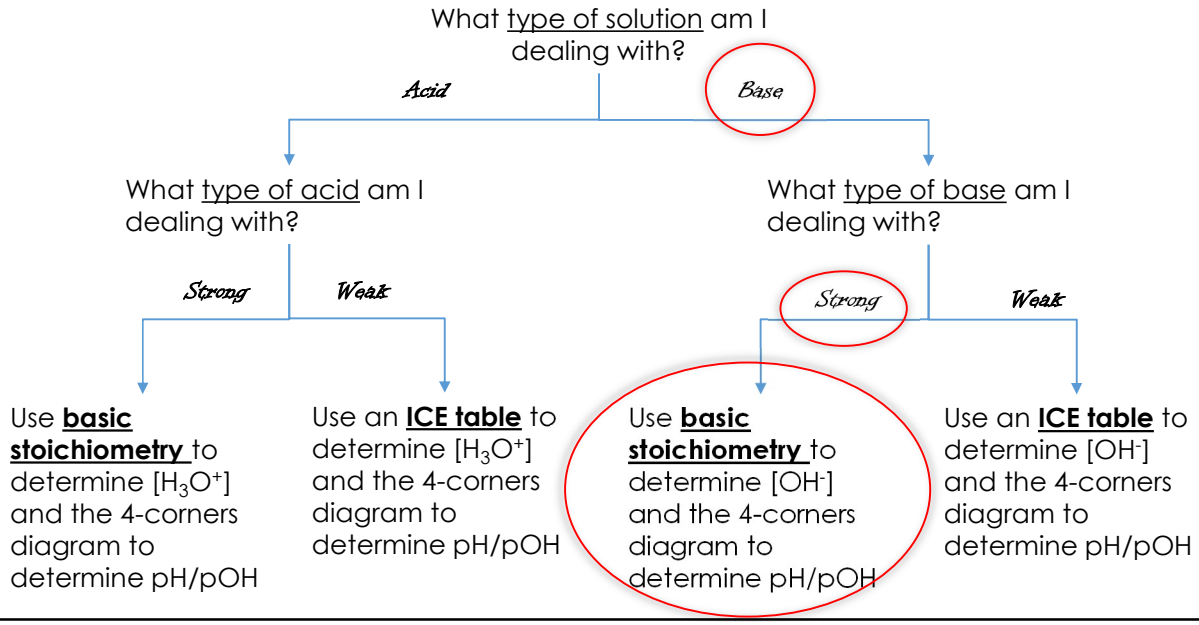
STRONG BASES

- Soluble hydroxides → dissociate completely in water
- **Not equilibriums**…use dissociation equations and stoichiometry



6

HAVE A PLAN OF ACTION!



7

FOR EXAMPLE

Calcium hydroxide is an important component of cement, plasters, and mortars. It is also sometimes used to make your pickles extra crunchy! Calculate the pH of a 0.125 M $Ca(OH)_2$ solution.

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