

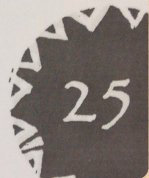
## Warm-Up:

### Acids and Bases

Although there is some disagreement on the exact definition of an acid or a base, there are some general qualities that help define them. An acid is a) a substance that can be a proton donor, b) a substance that can act as an electron acceptor, and c) a substance that produces hydronium ions ( $\text{H}_3\text{O}^+$ ) when dissolved in water. On the other hand, a base is a) a substance that can be a proton acceptor, b) a substance that can act as an electron donor, and c) a substance that produces hydroxyl ions ( $\text{OH}^-$ ) when dissolved in water.

Identify each of the following as an acid or a base.

- $\text{H}_2\text{SO}_4$  Acid
- $\text{NaOH}$  Base
- $\text{HCl}$  Acid
- $\text{HClO}_4$  Acid
- $\text{KOH}$  Base
- $\text{Ca}(\text{OH})_2$  Base



- Acids: Donates hydrogen ions

↳  $[\text{H}^+]$  Universal symbol for Acidity

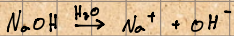
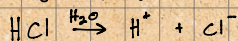
↳ brackets = concentration = Molarity

- Bases: donate hydroxide ions → accept  $\text{H}^+$  ions

↳  $[\text{OH}^-]$  = universal symbol for basicity

• Strong vs. Weak:

• Strong: completely ionized in solution



• Weak: only slightly ionizes in solution

