

Pre-AP Chemistry/Chemistry  
Unit #12—Acids and Bases

Homework Part I

$$\text{pH} = -\log[\text{H}^+]$$

$$\text{pOH} = -\log[\text{OH}^-]$$

$$\text{pH} + \text{pOH} = 14.00$$

$$[\text{H}^+] = 10^{-(\text{pH})}$$

$$[\text{OH}^-] = 10^{-(\text{pOH})}$$

| pH    | pOH  | [H <sup>+</sup> ]        | [OH <sup>-</sup> ]          | Acid or Base |
|-------|------|--------------------------|-----------------------------|--------------|
| 3.12  |      |                          |                             |              |
|       | 4.55 |                          |                             |              |
| 12.48 |      |                          |                             |              |
|       | 1.22 |                          |                             |              |
|       |      | 0.0225 M                 |                             |              |
|       |      |                          | 0.445 M                     |              |
|       |      |                          |                             |              |
|       |      | 5.7 x 10 <sup>-9</sup> M |                             |              |
|       |      |                          | 9.125 x 10 <sup>-11</sup> M |              |

Write the chemical name and identify the following as either an acid or a base.

- HCl
- HNO<sub>3</sub>
- NaOH
- Ca(OH)<sub>2</sub>
- HC<sub>2</sub>H<sub>3</sub>O<sub>2</sub>
- NH<sub>3</sub>
- Mg(OH)<sub>2</sub>
- LiOH

Identify the following as either an electrolyte or a non-electrolyte

- NaCl
- C<sub>6</sub>H<sub>12</sub>O<sub>6</sub>
- NaOH
- SO<sub>2</sub>
- HF
- Ca(OH)<sub>2</sub>