The concentration of H_3O^+ is 2.6 x 10^{-3} M in Pepsi. What is the concentration of OH^- in the soft drink?

1. 2.6 x 10^{-3}

2. 3.8 x 10^{-12}

3. 2.6 x 10^{-17}

4. 3.8 x 10^{-10}

Correct Answer: **2.**

Comments to the instructor: Some students think hydronium ion and hydroxide ion concentrations in all solutions are always the same (Choice 1). Choice 3 is obtained if the K_w of water is multiplied by the hydronium ion concentration given. Choice 3 is obtained if the exponents are not handled properly.

The concentration of OH^- 2.0 x 10^{-2} M in household ammonia. What is the concentration of H_3O^+ in the solution?

1. 5.0 x 10^{-13}

2. 2.0 x 10^{-2}

3. 5.0 x 10^{-11}

4. 1.0 x 10^{-14}

Correct Answer: **1.**

Comments to the instructor: Some students think hydronium ion and hydroxide ion concentrations in all solutions are always the same (Choice 2). Choice 4 is obtained if the K_w of water is thought to be the hydronium ion concentration. Choice 3 is obtained if the exponents are not handled properly.