# Video Lessons 1: A variety of pH problems for you to try!

# Solve the problems notebook paper. Watch the videos if you have trouble. These are the problems from the videos! Watch the videos if you do not have trouble ☺. This guy does a nice job of teaching approximation techniques when using logarithms. However, he does need some sig fig practice.

# Video 1: pH, pOH, H3O+, OH-, Kw, Ka, Kb, pKa, and pKb - Basic Calculations

# <https://www.youtube.com/watch?v=OEW4-Sfyvik>

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# Video 2: pH of Weak Acids, Weak Bases, Percent Ionization

[**https://www.youtube.com/watch?v=kJTCuRSeh6g**](https://www.youtube.com/watch?v=kJTCuRSeh6g)

**Video 1 Problems**

1. What is the pH of the solution if the [H3O+] is 2.5x10-4 M? (3.6)

2. The pOH of a solution is 4.5. Calculate the pH. (9.5)

3. If the pOH is 3.8, what is the [OH-]? (1.58x10-4 M)

4. What is the pOH of the solution if the [H3O+] is 4.2x10-3 M? (11.623)

5. If the Ka of an acid is 1.8x10-5, calculate the pKa and pKb values of the acid. (4.745, 9.255)

6. If [H3O+] is 7.1x10-2 M, calculate the [OH-]. (1.41x10-13 M)

7. If the pKa of an acid is 3.7, what is the Kb of the acid? (5.0x10-11)

8. Calculate the pH of a solution if the [OH-] is 0.015 M.

**Video 2 Problems**

1. What is the pH of a 0.75 M HC2H3O2 solution? Ka of HC2H3O2 is 1.8x10-5. (2.43)

2. What is the pH of a 0.25 M NH3 solution? Kb of NH3 is 1.8x10-5. (1.33)

3. What is the pH of 0.40 M NH4Cl? Kb of NH3 is 1.8x10-5. (4.83)

4. What is the pH of a 1.5 M HF solution? Ka of HF is 7.2x10-4. (8.66)

5. Calculate the percent ionization of a 0.75 M solution of HF. Ka of HF is 7.2x10-4. (3.1)