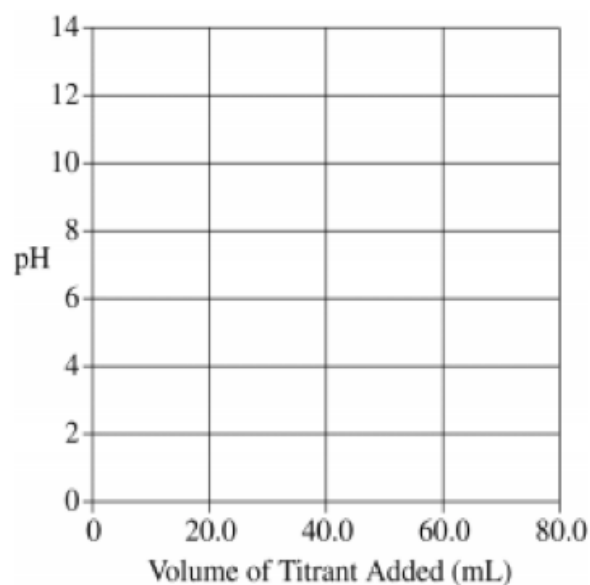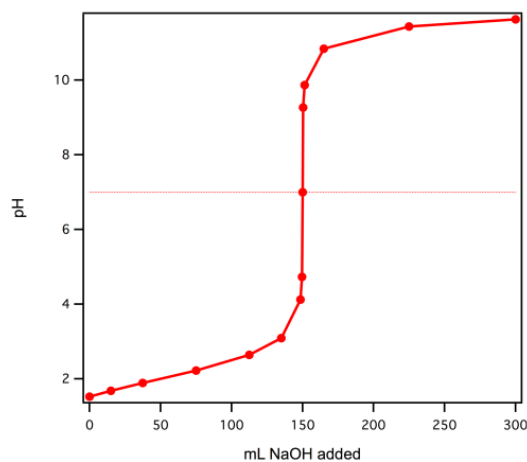5. <u>Example</u>: A 45.0 mL sample of 0.67 M HBr completely neutralized 28.0 mL of aqueous $Ca(OH)_2$ solution in a titration experiment.
   a. Calculate the molarity of the initial $Ca(OH)_2$ solution.

   b. Sketch the curve that would result from this titration experiment on the grid below.

Let's Practice!

1. A student graphs the titration curve shown below during the titration of 0.320 M perchloric acid with a standardized solution of 0.500 M NaOH. What volume of perchloric acid was being titrated?

$$HClO_4 + NaOH \longrightarrow H_2O + NaClO_4$$

$$.234 L \text{ or } 234 mL$$

2. In a titration, how many moles of lithium hydroxide would be needed to completely neutralize 2.5 mol of sulfuric acid?

$$H_2SO_4 + 2LiOH \longrightarrow 2H_2O + Li_2SO_4$$

$$5.0 mol$$

Tro, Nivaldo. *Chemistry: A Molecular Approach*. 3rd ed. New York City: Pearson, 2014. Print.

$$H_2SO_4 + 2RbOH \longrightarrow 2H_2O + Rb_2SO_4$$

3. 45.2 mL of 0.550 M RbOH was used to titrate 35.0 mL of H_2SO_4, initially at pH 2.20, to reach equivalence point. What was the initial volume of H_2SO_4?
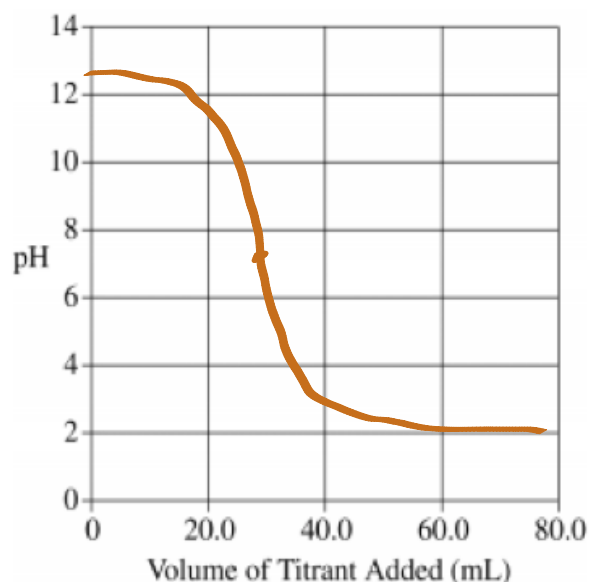
$$10^{-pH} = [H^+]$$

5. A 30.0 mL sample of 0.215 M hydroiodic acid completely neutralized 21.2 mL of aqueous rubidium hydroxide solution in a titration experiment.

    a. Calculate the molarity of the initial rubidium hydroxide solution.

$$.304 \ M$$

    b. Sketch the curve that would result from this titration experiment on the grid below.

6. In a titration, what volume of 4.65 M $Ba(OH)_2$ is needed to neutralize 90.65 mL of 1.80 M HNO_3?

$$2HNO_3 + Ba(OH)_2 \longrightarrow 2H_2O + Ba(NO_3)_2$$

$$.0351 L \ or \ 35.1 \ mL$$

Tro, Nivaldo. *Chemistry: A Molecular Approach*. 3rd ed. New York City: Pearson, 2014. Print.