

Acid and Base Homework

- 1) What color would you expect litmus to turn in the following solutions?
 - Solution A has a pH of 4.5 _____
 - Solution B smells like ammonia _____
 - Solution C is sticky: _____
 - Solution D feels very slippery: _____
 - Solution E turns phenolphthalein pink: _____
 - Solution F tastes like vinegar: _____

- 2) What are the pH values of the following solutions?
 - A 1.45×10^{-5} M HCl solution.
 - A 4.33×10^{-3} M NaOH solution.
 - A solution that contains 25 grams of NaOH in a total solution volume of 12.5 L.
 - A solution with a pH of 6.6.
 - A 0.0010 M HNO_3 solution (don't use a calculator for this one)
 - A 0.010 M NaOH solution (don't use a calculator for this one)

- 3) Write a balanced equation for each of the following neutralization reactions:
 - Nitric acid + sodium hydroxide \rightarrow
 - Sulfuric acid + lithium hydroxide \rightarrow
 - Hydrochloric acid + calcium hydroxide \rightarrow
 - Magnesium hydroxide + sulfuric acid \rightarrow

- 4) I titrated 45 mL of an acid with 125 mL of 0.010 M NaOH. Find the concentration of the acid and determine its pH.

- 5) If it took me 65 mL of 0.25 M HCl to titrate 15 mL of a basic solution with unknown concentration, what were the concentration and pH of this solution?

- 6) Explain why we stop a titration when the indicator changes color.

- 7) How many mL of 0.005 M NaOH would it take to neutralize 400 mL of 0.0035 M HCl?