You measure out 25.00 ml of a monoprotic strong acid of an unknown concentration and you add a few drops of phenolphthalein.

You titrate it with17.40 ml of 0.70 M NaOH until the solution is a pale pink color. What is the concentration of your acid?

You dissolve 2.031 grams of HCl in water. You titrate it with base to the equivalence point using 27.15 mL of NaOH. What is the concentration of your NaOH?

A solution has  $[H^+] = 0.00175 \text{ M}.$ 

(a) What is the [OH-]?

(b) What is the pH?

(c) What is the pOH?

A solution has a pOH of 3.45

- (a) Is it acidic or basic?
- (b) What is the [H+]?

Matching: Match the chemical to the word that best classifies it.

- (a)  $HC_2H_3O_2$
- (b) H<sub>3</sub>PO<sub>4</sub>
- (c) NaOH
- (d) HSO<sub>4</sub>-
- (e)  $NH_3$

Bronsted-Lowry base Arrhenius base Monoprotic acid Triprotic acid Amphoteric

Label the acid, base, conjugate acid, and conjugate base for each reaction. Draw arrows to show the transfer of hydrogen

a.  $H_2O + NH_3 \leftrightarrows NH_4^+ + OH^-$ 

b.  $H_2O + HCI \leftrightarrows H_3O^+ + CI^-$ 

 $HC_2H_3O_2 \ + \ NH_3 \leftrightarrows \ C_2H_3O_2^- \ + \ NH_4$ 

(a) Label the acid, base, conjugate acid, and conjugate base.

(b) Draw arrows to show the transfer of hydrogen.

 $\mathsf{HF}+\mathsf{H}_2\mathsf{O}\leftrightarrows$ 

(a)Write the products and balance the Bronsted-Lowry reaction.

(b)Label the acid, base, conjugate acid, and conjugate base.

(c) Draw arrows to show the transfer of hydrogen.

 $H_3PO_4 + Mg(OH)_2 \leftrightarrows$ 

Write the products and balance the neutralization reaction.

 $\mathsf{H}_2\mathsf{SO}_4 + \mathsf{KOH} \leftrightarrows$ 

Write the products and balance the neutralization reaction.