

**Acid-Base Review Worksheet - CHEMISTRY**

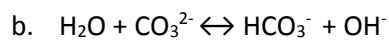
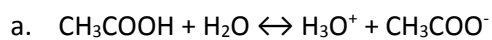
Name: \_\_\_\_\_ Per: \_\_\_\_\_

*Complete the following. Show all of your work for any calculations. Box or circle your answer.*

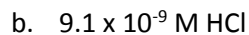
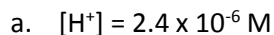
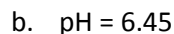
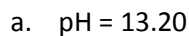
1. Compare and contrast the following:

- a. Acid properties and base properties
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
- b. Arrhenius acid and base.
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
- c. Bronsted-Lowry acid and base
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
- d. Conjugate acid and conjugate base
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
- e. Monoprotic acid and polyprotic acid
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
- f. Binary acid and ternary acid
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
- g. Strong acid and weak acid (Include a list of strong acids)
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
- h. Strong base and weak base (include a list of strong bases)

6. Identify the acid/base pairs (use BA, BB, ca and cb):



7. What are the pH values for the following? Determine if the solution is acidic or basic.

8. Calculate the  $[\text{H}^+]$  for the following.

9. Calculate the molarity for each of substance specified in the following problems.

a. 25.5 mL of 0.75 M hydrochloric acid is used to titrate 10.0 mL of calcium hydroxide. What is the concentration (M) of the base?  $2\text{HCl} + \text{Ca}(\text{OH})_2 \rightarrow \text{CaCl}_2 + 2\text{H}_2\text{O}$

b. Determine the concentration (M) of 15 mL of nitric acid ( $\text{HNO}_3$ ) that is titrated with 10.5 mL of 2.5 M NaOH.

10. What would you expect the pH to be at the equivalence point for the following titrations:

a. strong acid-strong base \_\_\_\_\_      b. strong acid-weak base \_\_\_\_\_      c. weak acid-strong base \_\_\_\_\_

11. Complete the following statements.

- a. The process used to determine the concentration of an unknown solution is called \_\_\_\_\_.
- b. A reaction where an acid and a base react to form salt and water is called a \_\_\_\_\_ reaction.
- c. A substance that can act as both an acid and a base is called a(n) \_\_\_\_\_ substance.
- d. A hydrogen ion and a water molecule form a \_\_\_\_\_ ion. The formula is \_\_\_\_\_.
- e. The equilibrium (ion product) constant of water has a symbol of \_\_\_\_\_ and a value of \_\_\_\_\_.
- f. The \_\_\_\_\_ has values of 0-14 and tells us whether a substance is an acid or a base.
- g. The \_\_\_\_\_ is reached when the moles of  $\text{H}^+$  and moles of  $\text{OH}^-$  are equal.
- h. The \_\_\_\_\_ is reached when the indicator changes color during a titration.