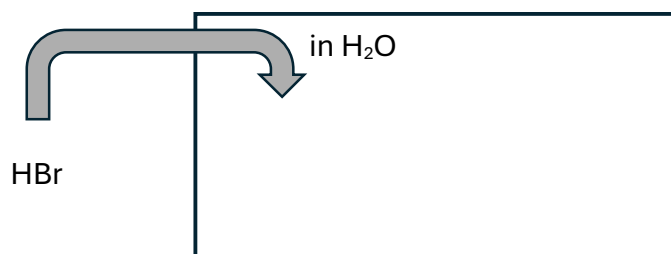


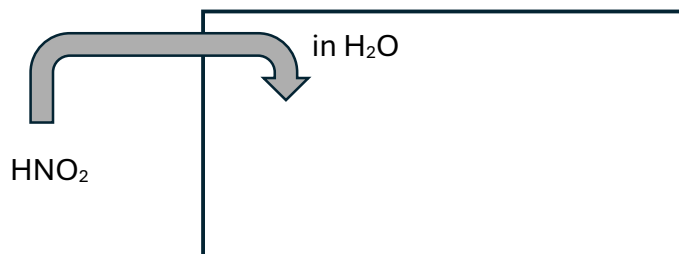
PAL Worksheet – Chem 6A
Acids and bases

I. Dissociation of acids and bases in water

1. What is the difference between an acid and a base? (Think about how these behave/what they do in water.)
2. What is the difference between a strong acid and a weak acid?
3. Recall the list of strong acids. Draw a diagram showing how HBr ionizes in water. (What species are present?)



4. Write a dissociation reaction that shows how HBr ionizes in water.
5. Is nitrous acid a strong acid or a weak acid? Draw a diagram showing how nitrous acid, HNO_2 , ionizes in water. (What species are present?)

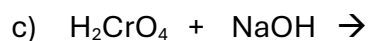
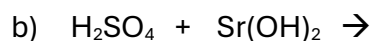
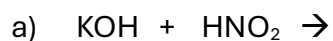


6. Is lithium hydroxide a strong base or a weak base?
7. Draw a diagram showing how lithium hydroxide produces hydroxide ions in water.
(What species are present?)
8. Write the dissociation reaction that shows how lithium hydroxide produces hydroxide ions in water.
9. Write a dissociation reaction for each of the following.
- a. HNO_3
 - b. NaOH
 - c. HCl
 - d. $\text{HC}_2\text{H}_3\text{O}_2$ (can also be written as CH_3COOH) (a weak acid)
 - e. Ca(OH)_2
 - f. H_2CO_3 For this one, write two reactions for each ionization.

II. Neutralization

1. What type of reaction occurs when a strong acid and a hydroxide base react together? What are the products in this type of reaction? Write a word equation for the reaction of a strong acid and a hydroxide base.

2. In the following reactions, predict the products and then balance the reaction:



3. When water forms in these reactions, where does the oxygen come from?