

Name \_\_\_\_\_ Block: \_\_\_\_\_ Date: \_\_\_\_\_

Chemistry 12

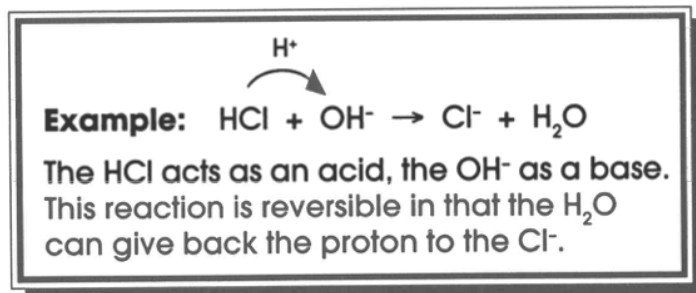
**BRØNSTED-LOWRY ACIDS & BASES**

1. Write the formula for a *proton* \_\_\_\_\_
2. Write the formula for a *hydrated proton* \_\_\_\_\_
3. Write the formula for a *hydronium* ion \_\_\_\_\_
4. Give the *Arrhenius* definition of an *acid* \_\_\_\_\_  
\_\_\_\_\_
5. Give the *Arrhenius* definition of a *base* \_\_\_\_\_  
\_\_\_\_\_
6. Give the *Brønsted-Lowry* definition of an *acid* \_\_\_\_\_  
\_\_\_\_\_
7. Give the *Brønsted-Lowry* definition of a *base* \_\_\_\_\_  
\_\_\_\_\_
8. What is an **amphiprotic anion**? \_\_\_\_\_  
\_\_\_\_\_
9. Give 4 examples of amphiprotic anions. (*Note – you may want to complete the next two pages first 😊*)
  - a) \_\_\_\_\_
  - b) \_\_\_\_\_
  - c) \_\_\_\_\_
  - d) \_\_\_\_\_

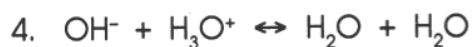
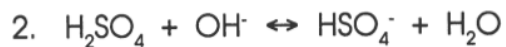
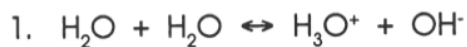
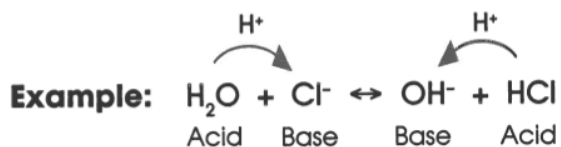
## BRONSTED-LOWRY ACIDS AND BASES

Name \_\_\_\_\_

According to Bronsted-Lowry theory, an acid is a proton ( $\text{H}^+$ ) donor, and a base is a proton acceptor.



Label the Bronsted-Lowry acids and bases in the following reactions and show the direction of proton transfer.



**CONJUGATE ACID-BASE PAIRS**

Name \_\_\_\_\_

In the exercise, Bronsted-Lowry Acids and Bases, it was shown that after an acid has given up its proton, it is capable of getting back that proton and acting as a base. Conjugate base is what is left after an acid gives up a proton. The stronger the acid, the weaker the conjugate base. The weaker the acid, the stronger the conjugate base.

Fill in the blanks in the table below.

**Conjugate Pairs**

	ACID	BASE	EQUATION
1.	$\text{H}_2\text{SO}_4$	$\text{HSO}_4^-$	$\text{H}_2\text{SO}_4 + \text{H}_2\text{O} \rightleftharpoons \text{H}_3\text{O}^+ + \text{HSO}_4^-$
2.	$\text{H}_3\text{PO}_4$		
3.		$\text{F}^-$	
4.		$\text{NO}_3^-$	
5.	$\text{H}_2\text{PO}_4^-$		
6.	$\text{H}_2\text{O}$		
7.		$\text{SO}_4^{2-}$	
8.	$\text{HPO}_4^{2-}$		
9.	$\text{NH}_4^+$		
10.		$\text{H}_2\text{O}$	