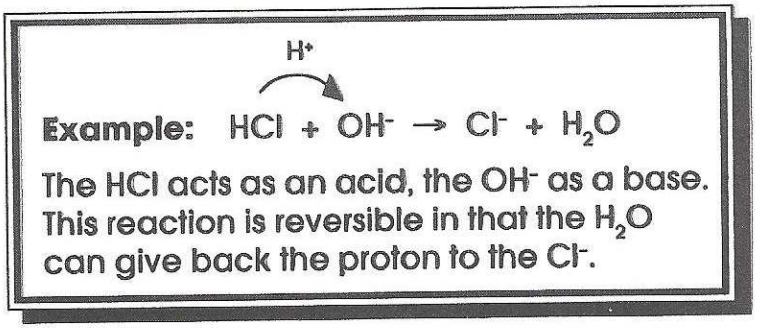
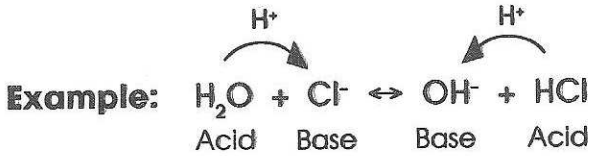
BRONSTED-LOWRY ACIDS AND BASES

Name _____

According to Bronsted-Lowry theory, an acid is a proton (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.



1. $H_2O + H_2O \leftrightarrow H_3O^+ + OH^-$

2. $H_2SO_4 + OH^- \leftrightarrow HSO_4^- + H_2O$

3. $HSO_4^- + H_2O \leftrightarrow SO_4^{-2} + H_3O^+$

4. $OH^- + H_3O^+ \leftrightarrow H_2O + H_2O$

5. $NH_3 + H_2O \leftrightarrow NH_4^+ + OH^-$

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.	H_2SO_4	HSO_4^-	$H_2SO_4 \leftrightarrow H^+ + HSO_4^-$
2.	H_3PO_4		
3.		F^-	
4.		NO_3^-	
5.	$H_2PO_4^-$		
6.	H_2O		
7.		SO_4^{-2}	
8.	HPO_4^{-2}		
9.	NH_4^+		
10.		H_2O	

Which is a stronger base, HSO_4^- or $H_2PO_4^-$? _____

Which is a weaker base, Cl^- or NO_2^-? _____