

## Acids and Bases



#3

Complete:

Conjugate Acid	$K_a$	$pK_a$	$pK_b$	$K_b$	Conjugate Base
$H_2CO_3$	$4.3 \times 10^{-7}$				
$HPO_4^{2-}$	$2.2 \times 10^{-13}$				
HCl					
					NaOH
			4.7		$NH_3$

Solution

Conjugate Acid	$K_a$	$pK_a$	$pK_b$	$K_b$	Conjugate Base
$H_2CO_3$	$4.3 \times 10^{-7}$	6.4	7.6	$2.3 \times 10^{-8}$	$HCO_3^-$
$HPO_4^{2-}$	$2.2 \times 10^{-13}$	12.7	1.3	$4.5 \times 10^{-2}$	$PO_4^{3-}$
HCl	$\gg 1$	$\ll 0$	$\gg 14$	$\ll 10^{-14}$	$Cl^-$
$Na^+$	$\ll 10^{-14}$	$\gg 14$	$\ll 0$	$\gg 1$	NaOH
$NH_4^+$	$5.6 \times 10^{-10}$	9.3	4.7	$1.8 \times 10^{-5}$	$NH_3$