## Library of Organic Chemistry Active Learning (LOCAL) Resources

## **Determination of Acid Strength**

Name:		Section:	(day/time)
For each of the following pairs compounds, determine which is the stronger acid ( $\mathbf{A}$ or $\mathbf{B}$ ) WITHOUT referring to a $\mathbf{pK_a}$ table. Of course, you might be able to check some of your answers by looking up the $\mathbf{pK_a}$ 's, but each of these problems can be solved by understanding acidity trends. Draw the conjugate bases, and compare the stabilities of the conjugate bases in order to make your prediction. Explain briefly.			
CH₃O <b>H</b>	CH₃S <b>H</b>	conjugate base of A (CB-A):	conjugate base of B (CB-B):
Α	В		
Stronger acid? Explain.			
CF₃CO₂ <b>H</b>	CCl <sub>3</sub> CO <sub>2</sub> H	conjugate base of A (CB-A):	conjugate base of B (CB-B):
Α	В		
Stronger acid? Explain.			
H		conjugate base using H <sub>A</sub> (CB-A):	conjugate base of H <sub>B</sub> (CB-B):
H-C-O-H <sub>B</sub> tr	y H <sub>A</sub> as an acid, then try H <sub>B</sub>		
More acidic protor	, -		
More acidic proton? Explain.			

Complete the Lewis structures given (add missing lone pairs) and predict the products expected for the above proton-transfer reaction. Use curved arrows to show the reaction mechanism. To which side does the equilibrium lie (Right/forward or Left/reverse or neither)? Hint: compare the two acids and compare the two bases; try tofind a difference in stability. More stable = less reactive, weaker acid or base.