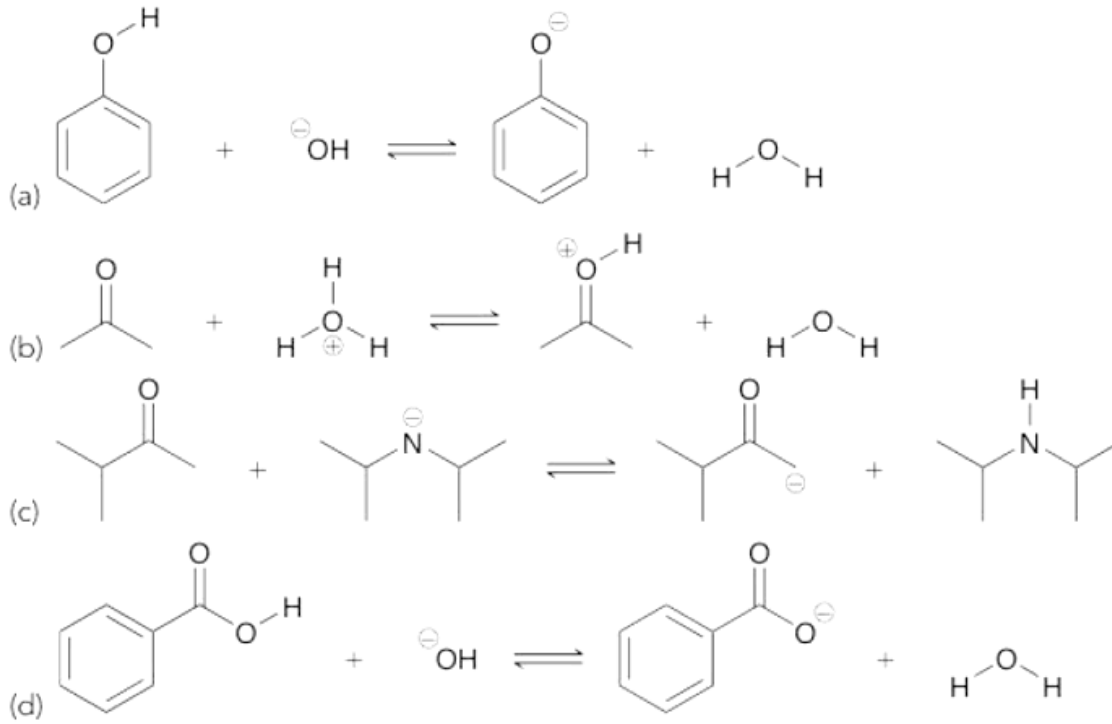


# Acid/Base from Klein



3.1.mp4

3.1 All of the following acid-base reactions are reactions that we will study in greater detail in the chapters to follow. For each one, draw the mechanism and then clearly label the acid, base, conjugate acid, and conjugate base:

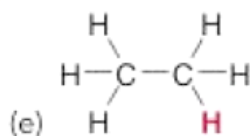
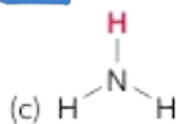
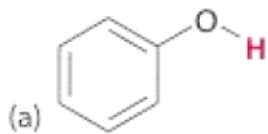


3.4.mp4

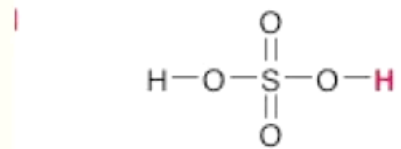
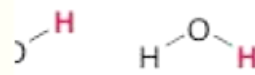
TABLE 3.1 pK<sub>a</sub> VALUES OF COMMON COMPOUNDS AND THEIR CONJUGATE BASES

Strongest acid	ACID	pK <sub>a</sub>	CONJUGATE BASE	Weakest base
	<chem>O=S(=O)(O)O</chem>	-9	<chem>[O-]S(=O)(=O)[O-]</chem>	
	<chem>Cl</chem>	-7	<chem>[Cl-]</chem>	
	<chem>CC(=O)O</chem>	-2.9	<chem>CC(=O)[O-]</chem>	
	<chem>O</chem>	-1.74	<chem>[OH-]</chem>	
	<chem>CC(=O)O</chem>	4.75	<chem>CC(=O)[O-]</chem>	
	<chem>CC(=O)C(=O)O</chem>	9.0	<chem>CC(=O)C(=O)[O-]</chem>	
	<chem>c1ccccc1O</chem>	9.9	<chem>[O-]c1ccccc1</chem>	
	<chem>O</chem>	15.7	<chem>[OH-]</chem>	
	<chem>CCOC</chem>	16	<chem>CC[O-]</chem>	
	<chem>CC(C)OC</chem>	18	<chem>CC(C)[O-]</chem>	
	<chem>CC(=O)O</chem>	10.3	<chem>CC(=O)[O-]</chem>	

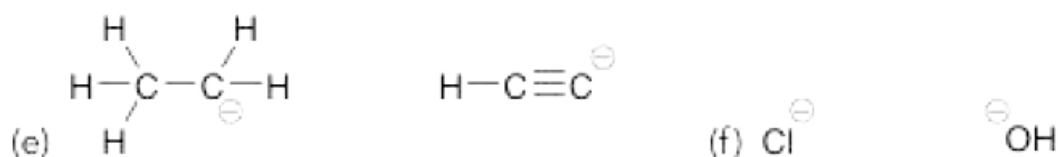
3.4 For each pair of compounds, identify the stronger acidic compound:



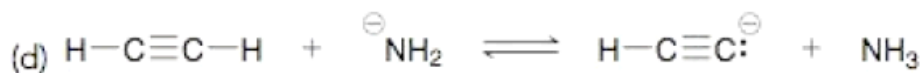
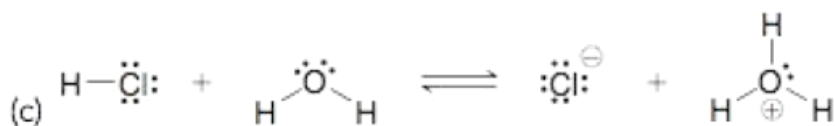
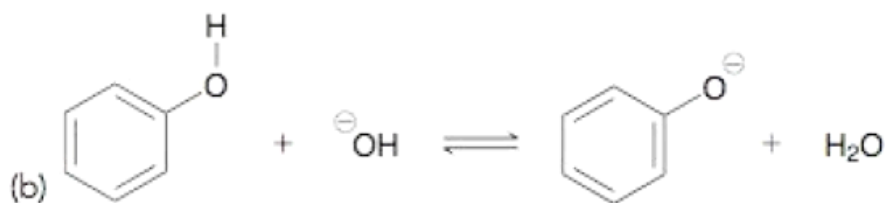
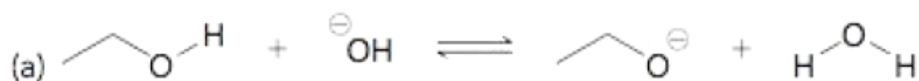
Identify the stronger acidic compound:



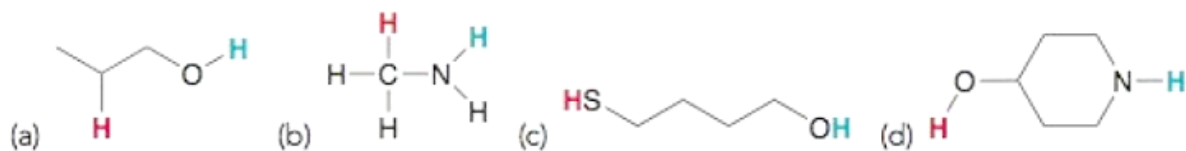
**3.7** For each pair of compounds below, identify the stronger base:



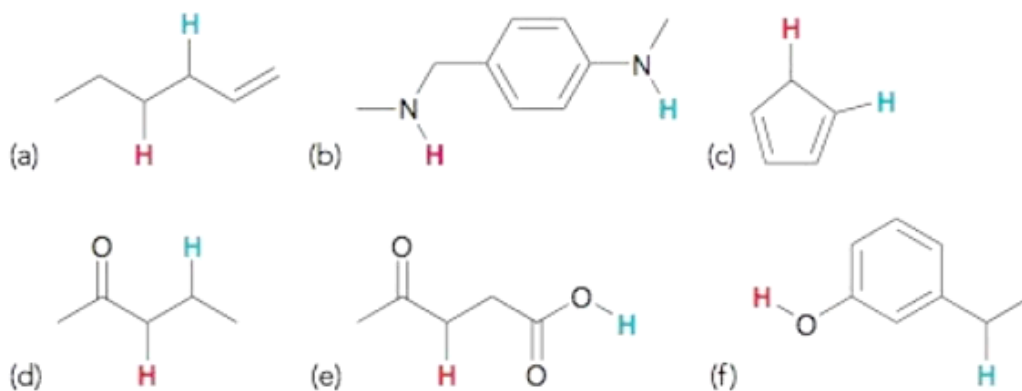
**3.10** Determine the position of equilibrium for each acid-base reaction below:



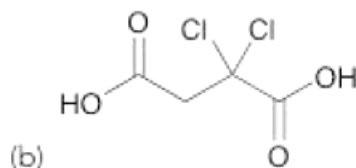
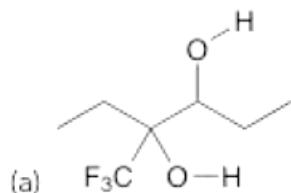
**3.13** In each compound below, two protons are clearly identified. Determine which of the two protons is more acidic.



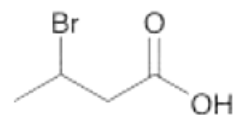
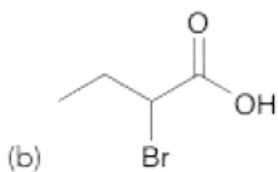
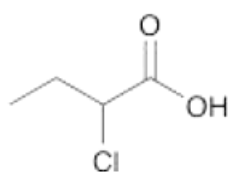
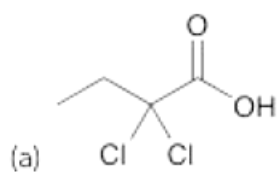
**3.15** In each compound below, two protons are clearly identified. Determine which of the two protons is more acidic.



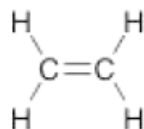
**3.18** Identify the most acidic proton in each of the following compounds and explain your choice:



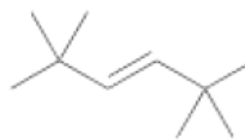
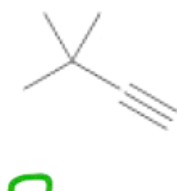
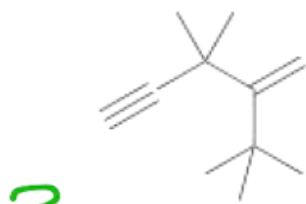
**3.19** For each pair of compounds below, identify which compound is more acidic and explain your choice:

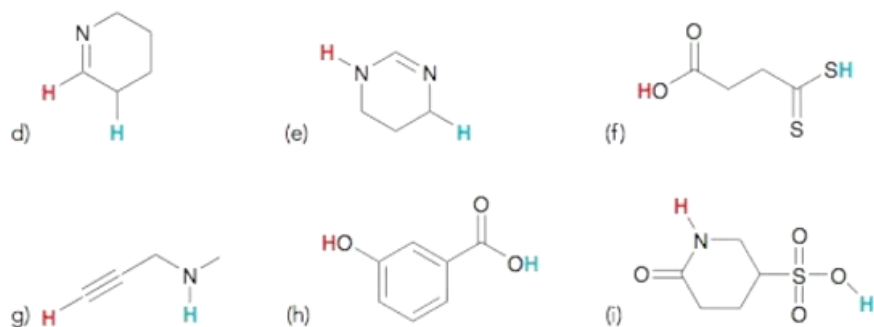


**3.22** Identify which of the following compounds is more acidic. Explain your choice.



**3.23** Identify the most acidic proton in each of the following compounds:





**3.25** In each compound below, two protons are clearly identified. Determine which of the two protons is more acidic.

**3.28** Amphotericin B is a powerful antifungal agent used for intravenous treatment of severe fungal infections. Identify the most acidic proton in this compound:

