

# ACIDS, BASES AND pH

NAME \_\_\_\_\_

SECTION \_\_\_\_\_

1. a. Go to [http://introchem.chem.okstate.edu/DCICLA/ph\\_meter.html](http://introchem.chem.okstate.edu/DCICLA/ph_meter.html).<sup>†</sup> Adjust the “solutions” settings to “acid” (or “base”) and the concentration to  $10 \times 10^{-2}$  M, choose the acid (or base), and complete the following table.

Solution	pH	Equilibrium $[H^+]$ or $[OH^-]$
0.100 M HCl		
0.100 M HNO <sub>3</sub>		
0.100 M H <sub>2</sub> SO <sub>4</sub>		
0.100 M HC <sub>2</sub> H <sub>3</sub> O <sub>2</sub>		
0.100 M NaOH		
0.100 M NH <sub>3</sub>		

- b. How does the measured concentration of the  $H^+$  compare to the concentration of HCl?
- c. This relationship is characteristic of a strong acid. Briefly describe the qualitative relationship between the concentration of a strong acid and the extent of the dissociation of the acid into its ions.
- d. How does the measured concentration of the  $OH^-$  compare to the concentration of NaOH?

<sup>†</sup> If you do not have access to this DCI's Web site link, your instructor will provide you with the data you will need.

- e. This relationship is characteristic of a strong base. Briefly describe the qualitative relationship between the concentration of a strong base and the extent of the dissociation of the base into its ions.
- f. Calculate the pH of a 0.450 M HCl solution.
- g. Calculate the pH of a 0.710 M KOH solution.