

% dissociation (% ionization) --  
amt. of weak acid that has  
dissociated to achieve equilibrium

$$\% \text{ diss.} = \frac{[\text{H}^+]}{\text{amt. dissociated (mol/L)}} \times 100$$

initial conc. (mol/L)

For weak acid, % dissociation  
increases as acid becomes more  
dilute.

For solutions of weak acid HA,  $[\text{H}^+]$   
decreases as  $[\text{HA}]_0$  decreases, but  
the % dissociation increases as  $[\text{HA}]_0$   
decreases.

Ex. 1

Calculate the % dissociation of acetic acid ( $K_a = 1.8 \times 10^{-5}$ ) for each of the following solutions.

- a. 1.00 M  $\text{HC}_2\text{H}_3\text{O}_2$
- b. 0.100 M  $\text{HC}_2\text{H}_3\text{O}_2$

Ex. 2

Calculate the  $K_a$  for a 0.100 M lactic acid ( $\text{HC}_3\text{H}_5\text{O}_3$ ) solution which is 3.7% dissociated.