Chem. 210-Jasperse Test 2 Name:
Chemical Equilibria
Acid-Base Equilibria

Key Equations:

$[H^+][HO^-] = 1.00 \times 10^{-14}$ $pH = -\log[H^+]$ $[H^+] = 10^{-pH}$ $pH + pOH = 14$

for weak acids in water: $K_a = [H^+]^2/[HA]_{init}$ $[H^{\oplus}] = \sqrt{K_a \times [HA]_{init}}$

for weak based in water: $K_b = [OH^-]^2/[Base]_{init}$ $[HO^{\ominus}] = \sqrt{K_b \times [Base]_{init}}$

(the above weak acid/base equations assume <5% ionization and assume no alternative source of common ions)

$K_aK_b = 10^{-14}$ for a conjugate acid/base pair

Quadratic Equation: $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$