Name _____ Date _____ Class _____

18–2 Practice Problems

1. Acetic acid is a weak monoprotic acid. It is the active ingredient in vinegar. If the initial concentration of acetic acid is 0.200 *M* and the equilibrium concentration of H_3O^+ is 0.0019 *M*, calculate K_a for acetic acid.

2. Ammonia is a weak base. If the initial concentration of ammonia is 0.150 *M* and the equilibrium concentration of OH^- is 1.6×10^{-3} *M*, calculate K_b for ammonia.

3. Formic acid is a weak monoprotic acid. If the initial concentration of formic acid is 0.10 *M* and the equilibrium concentration of H_3O^+ is 4.2×10^{-3} *M*, calculate K_a for formic acid.

4. Cyanic acid is a weak monoprotic acid. If the initial concentration of cyanic acid is 0.150 *M* and the equilibrium concentration of H_3O^+ is 4.8×10^{-2} *M*, calculate K_a for cyanic acid.

5. Isobutylamine is a weak base. If the initial concentration of isobutylamine is 0.055 *M* and the equilibrium concentration of OH^- is 4.0×10^{-3} *M*, calculate K_b for isobutylamine.

6. Gallic acid is a weak monoprotic acid. If the initial concentration of gallic acid is 0.280 *M* and the equilibrium concentration of H_3O^+ is 3.3×10^{-3} *M*, calculate K_a for gallic acid.

7. Trimethylamine is a weak base. If the initial concentration of trimethylamine is 0.390 *M* and the equilibrium concentration of OH^- is 4.4×10^{-3} *M*, calculate K_b for trimethylamine.

8. Dipropylamine is a weak base. If the initial concentration of dipropylamine is 0.160 *M* and the equilibrium concentration of OH^- is 0.012 *M*, calculate K_b for dipropylamine.

9. Uric acid is a weak acid. If the initial concentration of uric acid is 0.110 *M* and the equilibrium concentration of H_3O^+ is 3.4×10^{-2} *M*, calculate K_a for uric acid.

10. Butylamine is a weak base. If the initial concentration of butylamine is 0.230 *M* and the equilibrium concentration of OH^- is 8.6×10^{-6} *M*, calculate K_b for butylamine.