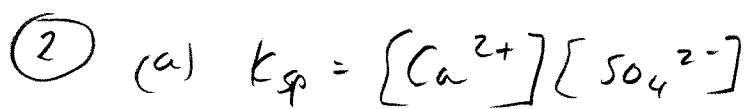
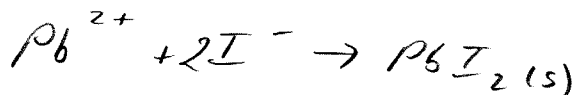
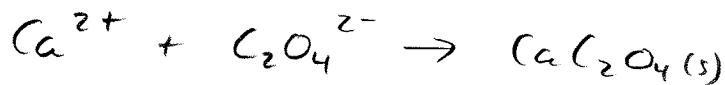
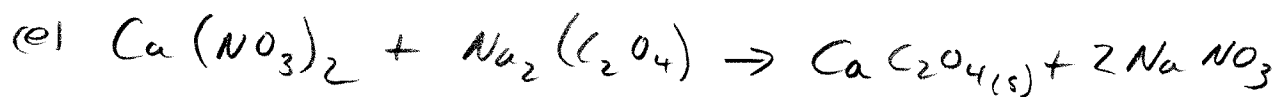
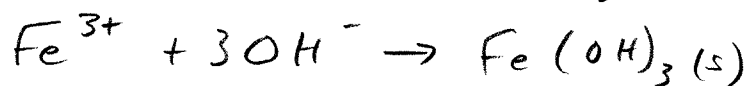
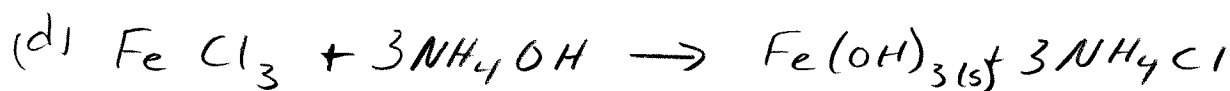
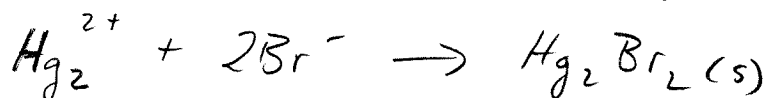
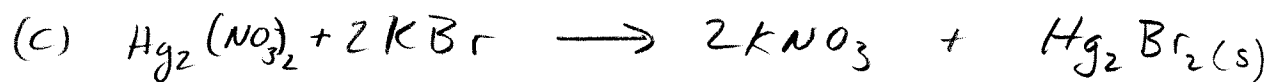
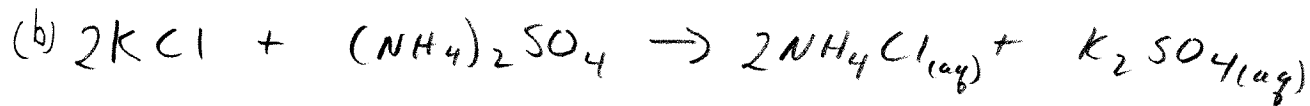
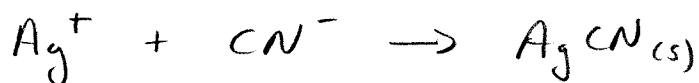
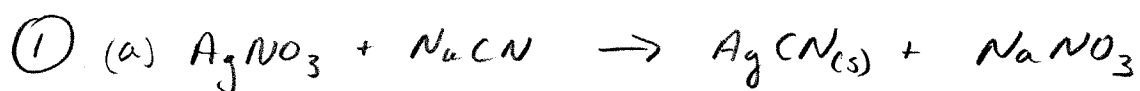


Chemical Equilibrium Part 2 Review



$$= (5.0 \times 10^{-3} \text{ mol/L})(5.0 \times 10^{-3} \text{ mol/L}) = \underline{2.5 \times 10^{-5}}$$



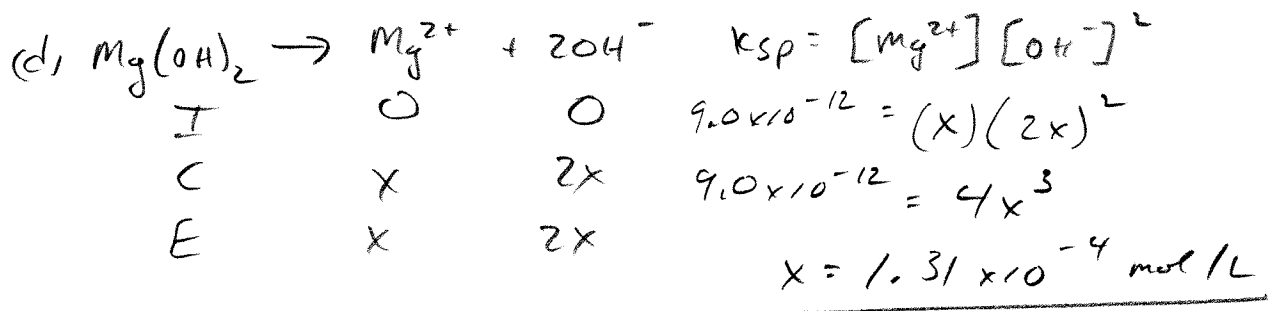
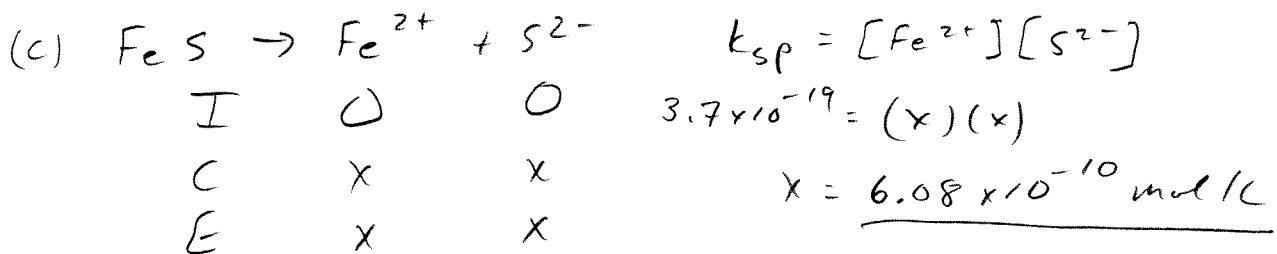
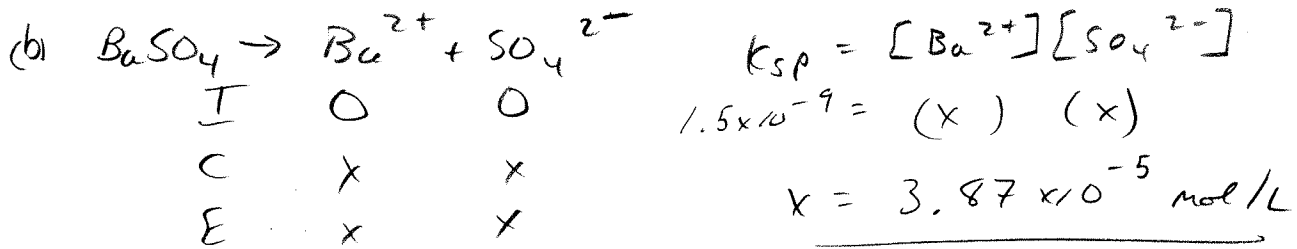
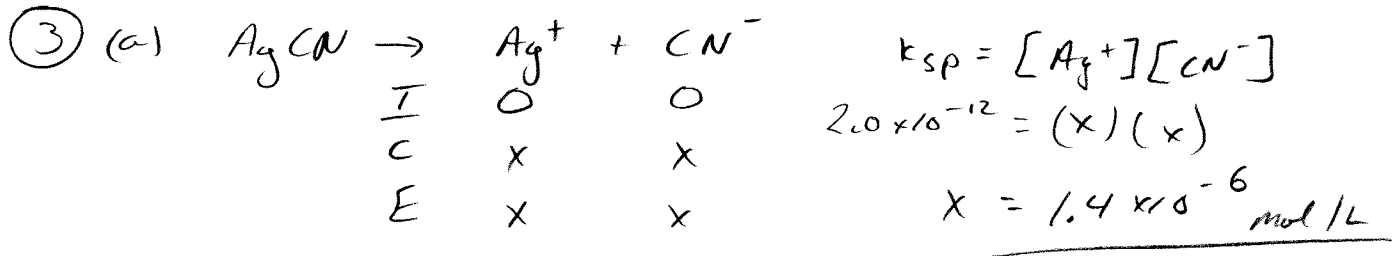
$$= (2.7 \times 10^{-3} \text{ mol/L})(2 \times 2.7 \times 10^{-3} \text{ mol/L})^2 = \underline{7.9 \times 10^{-8}}$$

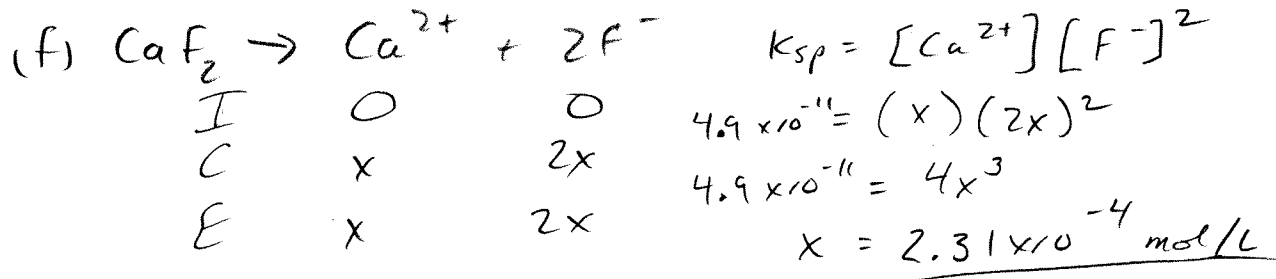
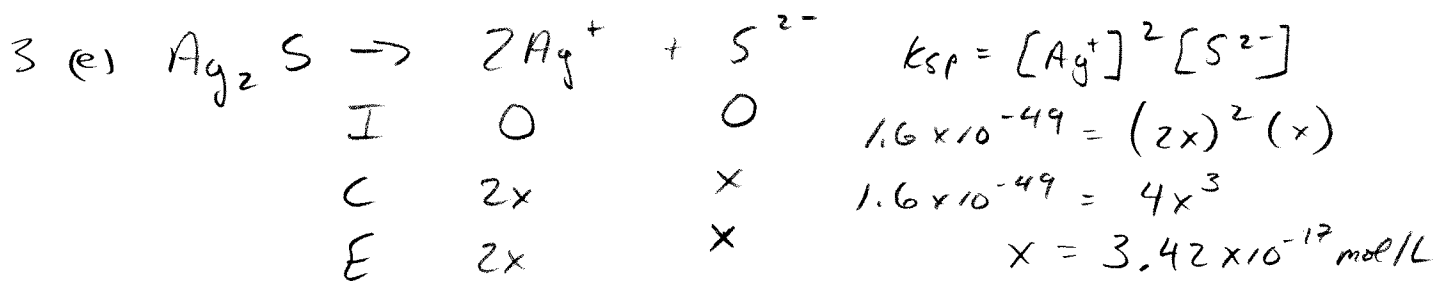
$$2 \text{ (c) } K_{sp} = [Ag^+][C_2H_3O_2^-]$$

$$= (6.1 \times 10^{-2} \text{ mol/L})(6.1 \times 10^{-2} \text{ mol/L}) = \underline{3.7 \times 10^{-3}}$$

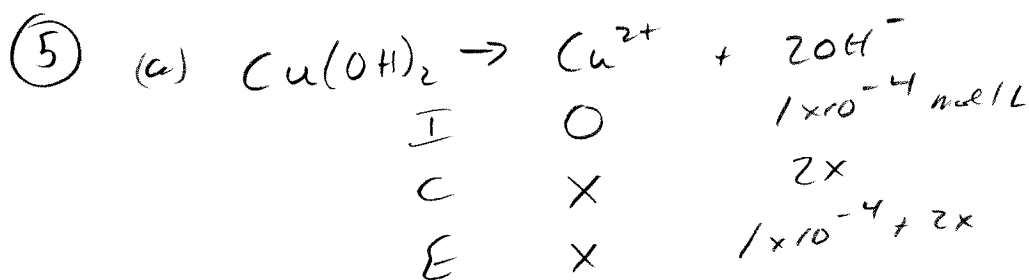
$$\text{(d) } K_{sp} = [Sr^{2+}][F^-]^2$$

$$= (9.71 \times 10^{-4} \text{ mol/L})(2 \times 9.71 \times 10^{-4} \text{ mol/L})^2 = \underline{3.7 \times 10^{-9}}$$





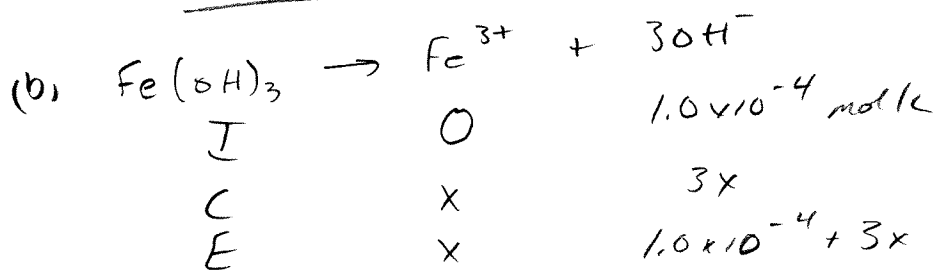
④ (b) PbSO_4 - it has the largest K_{sp}



$$K_{sp} = [\text{Cu}^{2+}] [\text{OH}^-]^2$$

$$1.6 \times 10^{-9} = (x)(1 \times 10^{-4} + 2x)^2$$

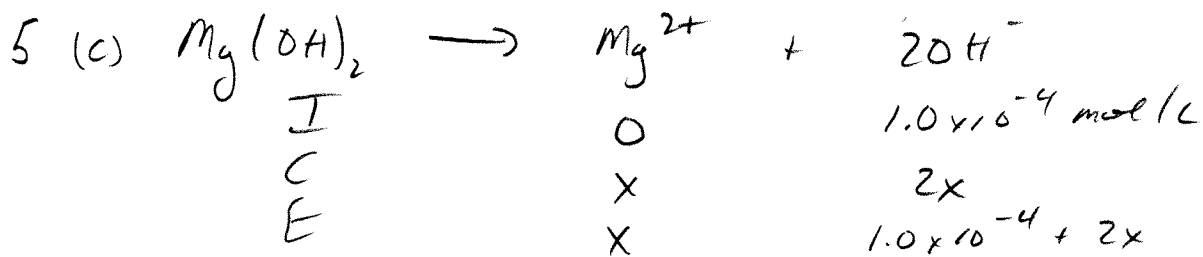
$$x = \underline{0.16 \text{ mol/L}}$$



$$K_{sp} = [\text{Fe}^{3+}] [\text{OH}^-]^3$$

$$6.0 \times 10^{-38} = (x)(1.0 \times 10^{-4} + 3x)^3$$

$$x = \underline{6.0 \times 10^{-26} \text{ mol/L}}$$



$$K_{sp} = [\text{Mg}^{2+}][\text{OH}^-]^2$$

$$6.0 \times 10^{-12} = (x)(1.0 \times 10^{-4} + 2x)^2$$

$$x = \underline{6.0 \times 10^{-4} \text{ mol/L}}$$

⑥ First find concentration

$$\text{CdS} \quad \text{molar mass} = 112.4 + 32.1 = 144.5 \text{ g}$$

$$1 \text{ mol} = 144.5 \text{ g}$$

$$x \quad 1.892 \times 10^{-13} \text{ g}$$

$$x = 1.309 \times 10^{-15} \text{ mol}$$

$$\text{Conc} = \frac{\text{mol}}{\text{L}} = \frac{1.309 \times 10^{-15} \text{ mol}}{.350 \text{ L}} = 3.74 \times 10^{-15} \text{ mol/L}$$



$$\text{so } [\text{Cd}^{2+}] = [\text{S}^{2-}] = 3.74 \times 10^{-15} \text{ mol/L}$$

$$K_{sp} = [\text{Cd}^{2+}][\text{S}^{2-}]$$

$$= (3.74 \times 10^{-15} \text{ mol/L})(3.74 \times 10^{-15} \text{ mol/L})$$

$$= \underline{1.40 \times 10^{-15}}$$