

$$K_c = \frac{[\text{FeSCN}^{2+}(\text{aq})]}{[\text{Fe}^{3+}(\text{aq})][\text{SCN}^{-}(\text{aq})]}$$

$$= \frac{(2.62 \times 10^{-5} \text{ M})}{(9.74 \times 10^{-4} \text{ M})(1.74 \times 10^{-4} \text{ M})}$$

$$K_c = 155$$

TEST TUBE 2

$$[\text{conc}] = \frac{A}{y} = \frac{0.244}{5000} = 4.88 \times 10^{-5}$$

↳ x value

At Equilibrium

$$[\text{Fe}^{3+}(\text{aq})] = 9.51 \times 10^{-4} \text{ M}$$

$$[\text{SCN}^{-}(\text{aq})] = 3.51 \times 10^{-4} \text{ M}$$

$$K_c = 146$$

TEST TUBE 3

$$[\text{conc}] = \frac{A}{y} = \frac{0.343}{5000} = 6.86 \times 10^{-5}$$

At Equilibrium

$$[\text{Fe}^{3+}(\text{aq})] = 9.31 \times 10^{-4} \text{ M}$$

$$[\text{SCN}^{-}(\text{aq})] = 5.31 \times 10^{-4} \text{ M}$$

$$K_c = 139$$

TEST TUBE 4

$$[\text{conc}] = \frac{A}{y} = \frac{0.428}{5000} = 8.56 \times 10^{-5}$$

At Equilibrium

$$[\text{Fe}^{3+}(\text{aq})] = 9.14 \times 10^{-4} \text{ M}$$

$$[\text{SCN}^{-}(\text{aq})] = 7.14 \times 10^{-4} \text{ M}$$

$$K_c = 131$$

TEST TUBE 5

$$[\text{conc}] = \frac{A}{y} = \frac{0.528}{5000} = 1.06 \times 10^{-4}$$

At Equilibrium

$$[\text{Fe}^{3+}(\text{aq})] = 0.999 \text{ M}$$

$$[\text{SCN}^{-}(\text{aq})] = 0.999 \text{ M}$$

$$K_c = 133$$

AVERAGE OF Kc VALUES

$$\frac{155 + 146 + 139 + 131 + 133}{5}$$

$$= 140.8 \sim 141$$