ER	EXPERIMENT/SUBJECT	DATE
	LAB PARTNER	LOCKER/DESK NO. / COURSE & SECTION NO.

SAMPLE CALCULATIONS

Part A

$[KSCN] = [FeSCN^{2+}]$

$C_1 = 0.00200\,M$

$V_1 = 0.00100\,L$

$C_2 = ?$

$V_2 = 0.0500\,L$

$C_1V_1 = C_2V_2$

$$C_2 = \frac{C_1V_1}{V_2}$$

$$C_2 = \frac{(0.00200\,M)(0.00100\,L)}{0.0500\,L}$$

$C_2 = 4.00 \times 10^{-5}\,M$

Part B

Slope of calibration curve

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$= \frac{0.6 - 0.5}{(1.25\times10^{-4}) - (1.05\times10^{-4})}$$

$= 5000$

$\therefore$ slope $= 5000$

and $y = 5000$

Determining the Equilibrium concentration of $FeSCN^{2+}$

$A = y\,[Conc]$

$$[Conc.] = \frac{A}{y}$$

$$[FeSCN^{2+}] = \frac{0.131}{5000}$$

$= 2.62 \times 10^{-5}\,M$

	$Fe^{3+}_{(aq)}$	+	$SCN^-_{(aq)}$	$\rightleftharpoons$	$FeSCN^{2+}_{(aq)}$
I	1.00×10^{-3}		2.00×10^{-4}		0
C	$-x$		$-x$		$+x$
E	$1.00\times10^{-3}-x$		$2.00\times10^{-4}-x$		2.62×10^{-5}

$\therefore x = 2.62 \times 10^{-5}$

$\therefore [Fe^{3+}_{(aq)}] = 1.00\times10^{-3} - x$

$= 1.00\times10^{-3} - (2.62\times10^{-5})$

$= 9.74 \times 10^{-4}\,M$

$\therefore [SCN^-_{(aq)}] = 2.00\times10^{-4} - x$

$= 2.00\times10^{-4} - (2.62\times10^{-5})$

$= 1.74 \times 10^{-4}\,M$

Determining the equilibrium constant K_C

SIGNATURE	DATE	WITNESS/TA	DATE