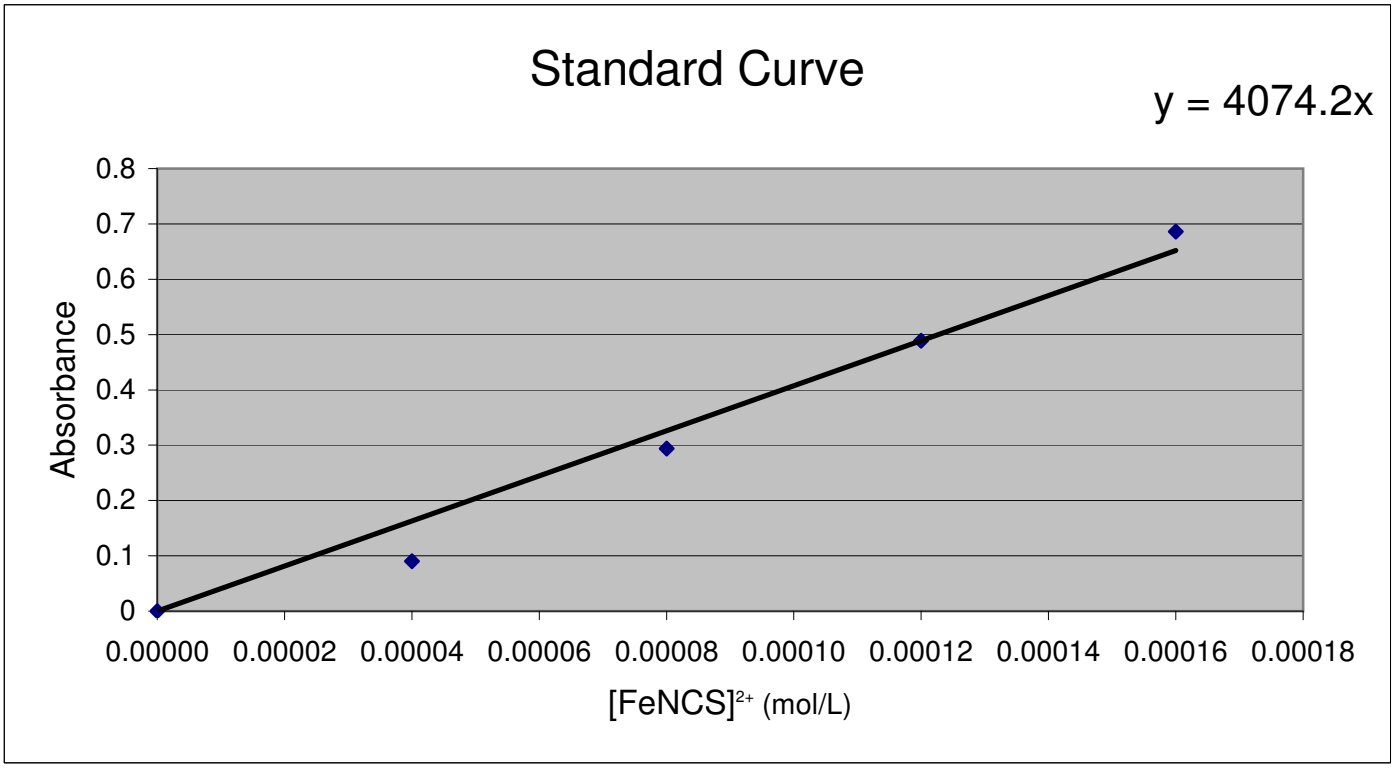
Part A: Establishing a Calibration Curve with Standard Solutions

	mL SCN^- used	$[FeCNS^{+2}]$	Absorbance	% Transmission
Blank	0.00	0.00000	0	100
Trial 1	1.00	0.00004	0.090	70.2
Trial 2	2.00	0.00008	0.294	45.4
Trial 3	3.00	0.00012	0.489	30.6
Trial 4	4.00	0.00016	0.686	20.6



Part B: Determining Kc with Data from Test Solutions

	mL SCN^- used	Absorbance	$[FeNCS^{2+}]$ *from standard curve*	mol $FeNCS^{2+}$ *at equilibrium*
Trial 5	1.00	0.022	5.39983E-06	5.39983E-08
Trial 6	2.00	0.145	3.55898E-05	3.55898E-07
Trial 7	3.00	0.185	4.54077E-05	4.54077E-07
Trial 8	4.00	0.269	6.60252E-05	6.60252E-07
Trial 9	5.00	0.359	8.81155E-05	8.81155E-07

$[Fe^{3+}]$ at equilibrium

	Initial (mol)	Reacted (mol)	Unreacted (mol)	Equilibrium (M)
Trial 5	1.00000E-05	5.39983E-08	9.94600E-06	9.94600E-08
Trial 6	1.00000E-05	3.55898E-07	9.64410E-06	9.64410E-08
Trial 7	1.00000E-05	4.54077E-07	9.54592E-06	9.54592E-08
Trial 8	1.00000E-05	6.60252E-07	9.33975E-06	9.33975E-08
Trial 9	1.00000E-05	8.81155E-07	9.11885E-06	9.11885E-08

$[SCN^-]$ at equilibrium

	Initial (mol)	Reacted (mol)	Unreacted (mol)	Equilibrium (M)
Trial 5	1.00000E-06	5.39983E-08	9.46002E-07	9.46002E-09
Trial 6	2.00000E-06	3.55898E-07	1.64410E-06	1.64410E-08
Trial 7	3.00000E-06	4.54077E-07	2.54592E-06	2.54592E-08
Trial 8	4.00000E-06	6.60252E-07	3.33975E-06	3.33975E-08
Trial 9	5.00000E-06	8.81155E-07	4.11885E-06	4.11885E-08

Kc = $\dfrac{[FeNCS^{2+}]}{[Fe^{3+}]\,[SCN^-]}$

Trial 5	5.73905E+09
Trial 6	2.24458E+10
Trial 7	1.86838E+10
Trial 8	2.11671E+10
Trial 9	2.34605E+10