Equilibrium Constant via Spectrophotometry

Student Name:

Partner Name:

Date	Instructor Initials	Grade

Part A

Standard Solution	Volume of 0.200 M $Fe(NO_3)_3$ (ml)	Volume of 1.00×10^{-3} M KSCN (ml)	
Blank			
1			
2			
3			
4			
5			

Standard Solution	Initial Concentration of $Fe(NO_3)_3$ (M)	Initial Concentration of KSCN (M)	Absorbance
Blank			
1			
2			
3			
4			
5			

Show an example of your dilution calculations for solution 1.

Prepare a Beer's Law Plot for the absorbance of iron thiocyanate. Report an equation of the line and R^2. You will need to upload your spreadsheet to Canvas. Comment on how well the data fits your model.

Part B			
Test Solution	Volume of 1.00×10^{-3} M $Fe(NO_3)_3$ (ml)	Volume of 1.00×10^{-3} M KSCN (ml)	Absorbance
6			
7			
8			
9			
10			
Test Solution	Initial Concentration of $Fe(NO_3)_3$ (M)	Initial Concentration of KSCN (M)	Equilibrium Concentration of $FeSCN^{2+}$ (M)
6			
7			
8			
9			
10			

Show an example of your dilution calculations for solution 6.

Show an example calculation of the equilibrium concentration of $FeSCN^{2+}$ for solution 6.

Test Solution	Equilibrium Constant
6	
7	
8	
9	
10	
Average =	

Show an example calculation of the equilibrium constant.

The accepted equilibrium constant for this reaction is between 138 and 146. Do your results fall with in this range. Comment on any sources of error in your technique.