Spectrophotometry Data Sheet

Student Name:

Partner Name:

Date	Instructor's Initials	Grade

Stock Dye Solutions	
Red 40	6.9993×10^{-5}
Yellow 5	7.0017×10^{-5}

Standard Dye Solutions					
Red 40					
Volume of Stock Solution	Final Volume	Dilution Factor†	[Red 40]	Absorbance at 428 nm	Absorbance at 508 nm
5 mL				0.06	0.192
10 mL				0.128	0.384
15 mL				0.176	0.523
20 mL				0.235	0.727

Yellow 5					
Volume of Stock Solution	Final Volume	Dilution Factor†	[Yellow 5]	Absorbance at 428 nm	Absorbance at 508 nm
5 mL				0.019	0.013
10 mL				0.322	0.035
15 mL				0.619	0.048
20 mL				0.878	0.068

† The dilution factor is the volume of the stock solution divided by the final volume. Multiplying the dilution factor by the concentration of the stock solution will give you the concentration of each standard solution.

Show your work for calculating the concentration of your first red 40 standard solution.

Unknown Mixture	
Absorbance at 428 nm	Absorbance at 508 nm
0.715	0.344

Prepare your four Beer's Law Calibration Plots. Be sure to title and label the axis of the plots appropriately. Display your linear regression equations and coefficient of determinations. Attach your sheet to this report and record the slope values into the appropriate fields in the following table. Upload your spreadsheet to Canvas.

Molar Absorbtivities		
	428 nm	508 nm
Red 40		
Yellow 5		

Calculate the concentration of red and yellow dye in the unknown mixture. Be sure to show all of your work using proper mathematical notation and units