

Name: _____

Spectrophotometry

DATA SHEET

1. Establishing a calibration curve

Standard Concentration (g Hb/100 mL)	Absorbance
4	
8	
12	
16	
20	

2. Determination of unknown concentration of blood

Record the designation of your unknown. _____

Trial #	Absorbance	Hb Concentration in "Diluted blood"	Actual Hb Concentration in "Blood"
1			
2			
Average			

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Spectrophotometry

REVIEW QUESTIONS

1. What is a spectrophotometer? What does it do?
2. What wavelengths comprise white light?
3. Why does an object or a solution appear to have color?
4. What is a calibration curve, in general, and how is it prepared?
5. How can your calibration curve be used to determine the status of someone's health?
6. If the absorbance of a sample falls outside, or off the graph, what can be done to make the absorbance fit onto the curve? Hint: What did you do to your unknown?
7. Is your "patient" healthy? Why or why not?
8. How can you report g Hb/100 mL when you only analyzed 10 mL?
9. Comment on the reproducibility of this method of analysis. Were your two values similar?
10. The iron thiocyanate complex $[\text{Fe}(\text{SCN})]^{2+}$ is considered an unstable complex. It decomposes over time. What constraints might this impose on your experimental measurement?