Name(s)_____

DATA SHEET
SPECTROPHOTOMETRY

I. Establishing a calibration curve

Solution	Concentration (g Hb/100 mL)	Absorbance
1	4.0	
2	8.0	
3	12.0	
4	16.0	
5	20.0	

Record the equation for your calibration line below:

Absorbance = _____ x Concentration + _____
slope intercept

II. Determination of unknown concentration of blood

Record the designation of your unknown. _____

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

Name(s)_____

REVIEW QUESTIONS
SPECTROPHOTOMETRY

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 $[Fe(SCN)]^{2+}$ is considered an unstable complex. It decomposes over time. What constraints might this impose on your experimental measurement?