Homework 4 - Due April 2

Instructions: Please answer the following questions with well thought out answers. You can use this sheet to write your answers or use your own. STAPLE this sheet to the front of the rest of your work. It is important to be able to explain ideas clearly. In this assignment pretend that you are trying to explain to a friend your answers. You should strive for your answers to be: precise, accurate, succinct, and understandable.

Question 1 The dosage chart below was prepared by a drug company for doctors who prescribe Tobramycin, a drug that combats serious bacterial infections such as those in the central nervous system, for life threating situations.

Weight (pounds)	Usual Dosage (mg)	Maximum Dosage (mg)
88	40	66
99	45	75
110	50	83
121	55	91
132	60	100
143	65	108
154	70	116
165	75	125
176	80	133
187	85	141
198	90	150
209	95	158

1. Plot the (weight, usual dosage) data on the attached graph paper and draw a line to approximate the data. Explain why your choice is a good fit. Devise a measure of "goodness" and explain it here.

2. Was a line an appropriate choice to model the data with? Would some other type of graph better suit this situation? Explain.

3. Plot the (weight, maximum dosage) data on the same axis as part. For the sake of clarity draw this in a different color. Draw a line that approximates the data well according to your measure you devised in **??**. How did you verify that this line modeled the data?

4. Find the slope for the lines you drew in parts ?? and ??. How do the slopes compare?

5. Explain what these slopes tells you about usual and maximum dosage of this drug.

6. Write the equation of the two lines. Clearly mark all the numbers that appear in the equations on each of the graphs.

7. Are the two lines parallel? Why or why not? Interpret what the real world meaning of these lines being parallel or not means.

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