Name_____

PHYSICS 216 HOMEWORK FOR LAB 12: INTERFEROMETERS

(Due at the beginning of Lab 13)

A PASCO microwave apparatus like the one you used in lab 9 was set up in a Michelson interferometer configuration, and 10 successive maxima were recorded in the table below.

#	X (cm)	Receiver reading (1x scale)
1	28.6	0.78
2	27.2	0.76
3	25.7	0.69
4	24.3	0.64
5	22.8	0.62
6	21.4	0.61
7	20.0	0.56
8	18.5	0.56
9	17.1	0.60
10	15.8	0.56

Analyze this data using the graphical method discussed in lab. Make an appropriate graph of the data and fit it with a straight line. From the linear fit parameters and their uncertainty, determine the wavelength and its uncertainty. Hand in a printout of the graph from Logger Pro, with an appropriate caption. Include in your caption a statement about whether the experimental wavelength is in good agreement with the manufacturer's claim.

What are some advantages to analyzing the data by graphing compared to simply taking means and standard deviations of the mean of the differences?