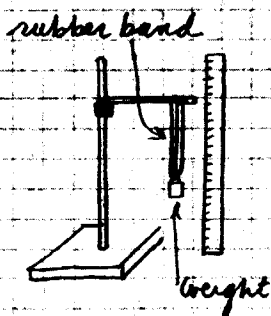


EXPERIMENT A.

SEPT. ANY YEAR

This experiment is to see how a rubber band stretches under the influence of forces



YOUR OWN SKETCH WILL ALWAYS HELP DESCRIBE THE EXPERIMENT

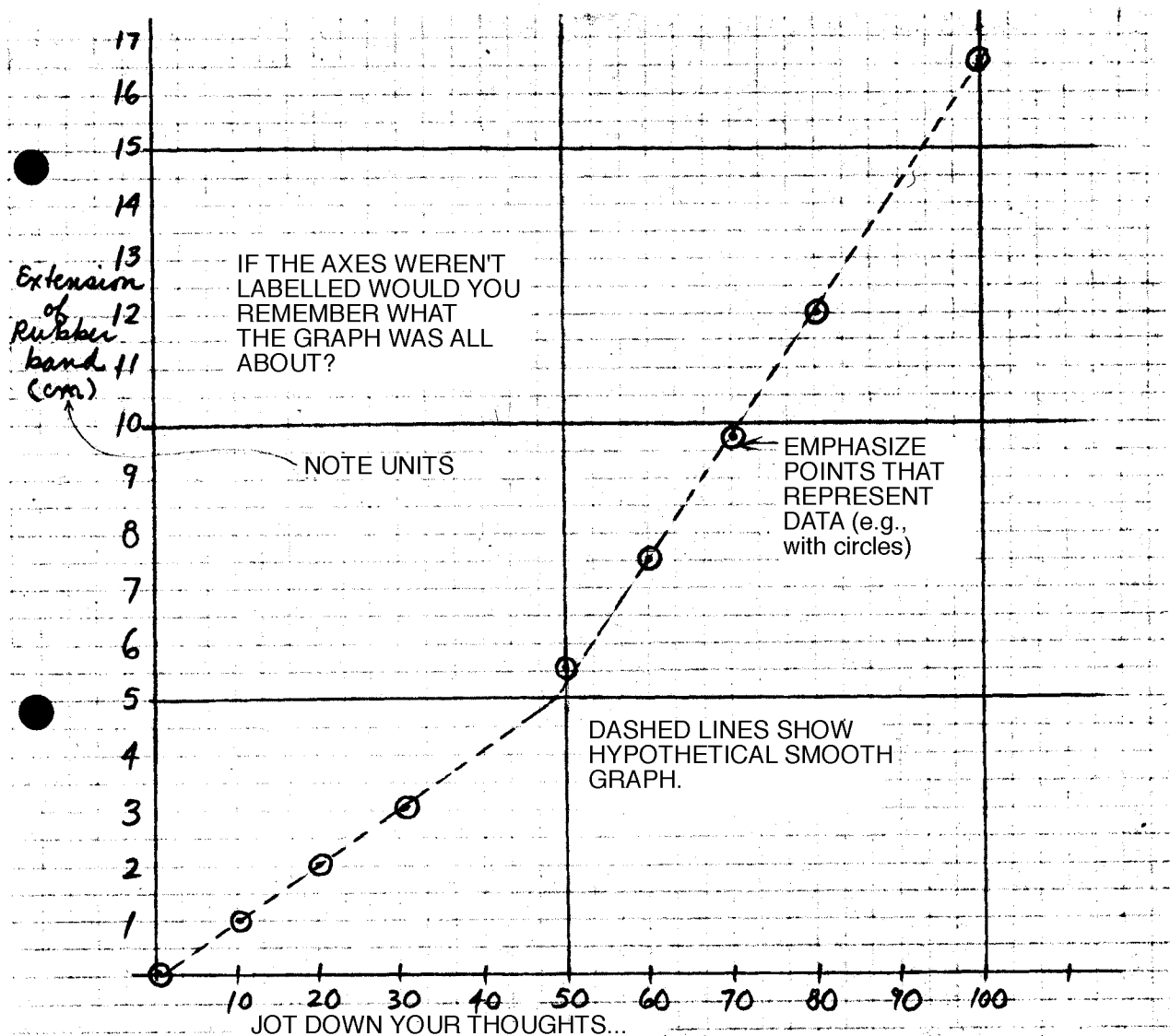
I put different masses on the end of the rubber band and recorded the position of the top of the hook that holds the weight

Room Temperature 26°C

Position of the top of rubber band 36.3 cm

Mass (g)	Force (N)	Pos of Bottom (cm)	Extension (cm)	INCLUDE ANY DATA YOU THINK MAY BE RELEVANT
(weights from 0 set, no error)	0	44.0 ± .1	0	ALWAYS SHOW UNITS OF TABULATED QUANTITIES
10	.098	45.1 "	1.1 ± .2	ESTIMATE THE ERROR OF EVERY QUANTITY YOU MEASURE
20	.196	45.8	1.8	
30	.294	46.8	2.8	
50	.490	49.6	5.6	
60	.588	51.5	7.5	second 20g weight is missing from set
70	.686	53.7	9.7	INCLUDE COMMENTS ON YOUR DATA
80	.784	56.1	12.1	
100	.980	60.6	16.6	KEEP DATA IN NEAT TABLES
80	.784	56.2	12.2	recheck

On these two pages is shown an example of a student's lab notebook report. The table is used to record both observed quantities (mass, scale position) and calculated quantities (force, extension of rubber band). The graph shows at a glance how the extension of the rubber band changes as the force acting on it is increased. The notes in capital letters are comments.



INCLUDE POSSIBLE QUESTIONS— ESPECIALLY ONES YOU CAN'T ANSWER

There are obviously two different straight lines.

It would have been nice to see what it was at 40 gm, since that's just where the two lines cross.

The slopes of the two lines are the force constants $F = -kx$. For the first line $k = .105 \text{ N/cm}$ and for the second $k = .0438 \text{ N/cm}$.

YOU WOULD PLOT ERROR BARS IF THE ERRORS WERE LARGE ENOUGH TO SEE ON THE GRAPH.

