S4 PHYSICS HOLIDAY WORK

Physics practical (*manipulation of data*)

(write the solutions in your graph books)

1. The results below were obtained in an experiment to determine the mass, M_0 of a metre rule.

a) l_0= 63.0 cm

x(cm)	y(cm)
5.0	49.8
10.0	50.9
15.0	52.0
20.0	53.1
25.0	54.5
30.0	55.4

a) Draw table including values of $\frac{1}{x}$, $(y-x)$ and (l_0-y).

b) Plot a graph of $(y-x)$ against (l_0-y).

c) Find the slope, **S** of your graph.

d) Calculate the mass, M_0 of the metre rule from the expression.

M_0 = 50 x **S**

2. The results below were obtained in an experiment to determine the focal length f, the curved mirror.

a) f_1 = 10.0cm

b)

x(cm)	y(cm)
20.0	19.8
24.0	17.1
28.0	15.6
32.0	14.5
36.0	13.8
40.0	13.3

Draw table including values $\frac{y}{x}$ and xy.

c) Plot a graph of y against $\frac{y}{x}$.

d) Find the slope, S, of your graph.

e) Read and record the intercept, y_0 on the y- axis.

f) Find the value of, f_2 from the expression,

$f_2 = \frac{S+y_0}{2}$

g) Find the average value, f, of f_1 and f_2.

END