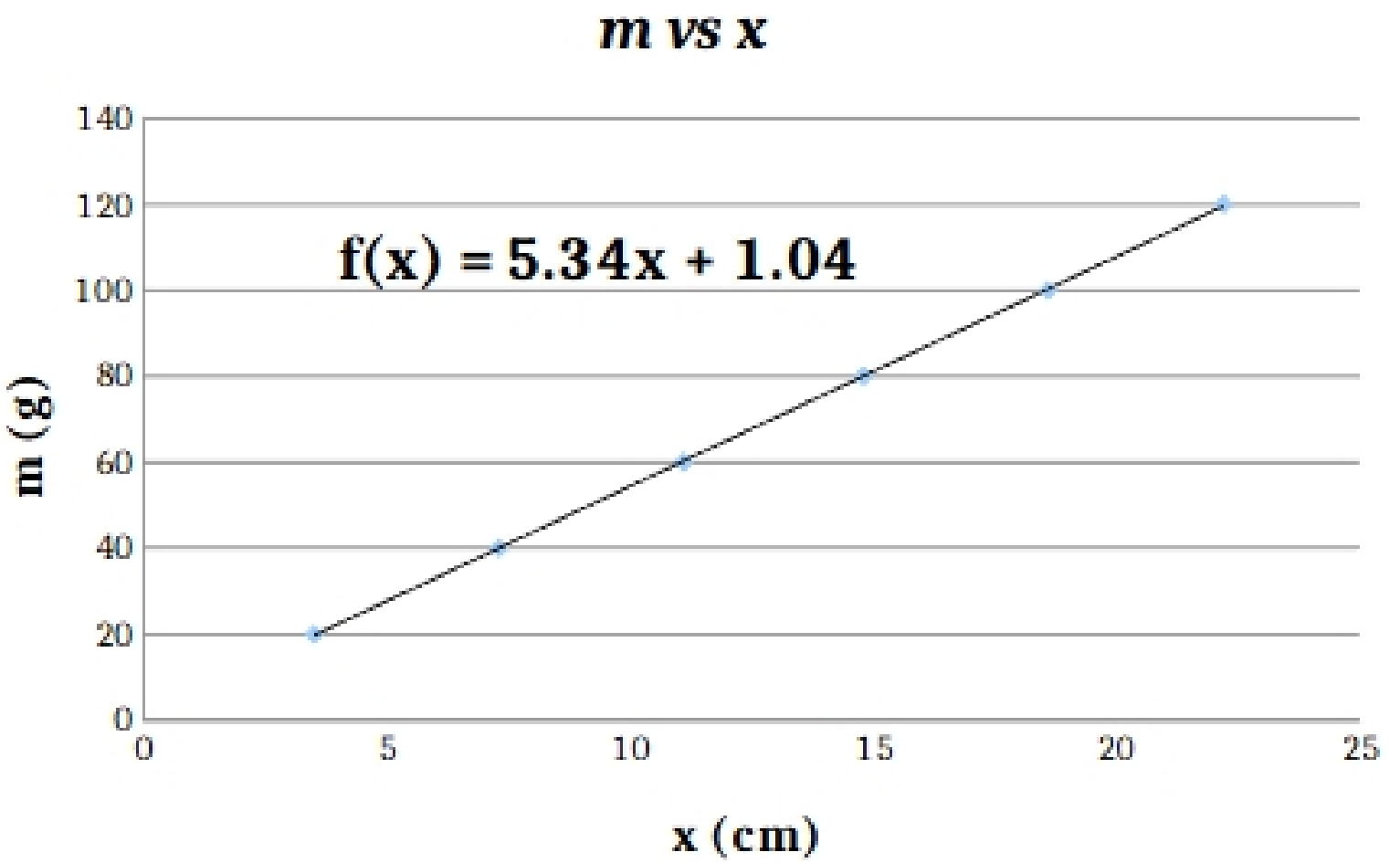
VI-1

m (g)	x_m (cm)	$x=x_0-x_m$ (cm)
20	39.3	3.5
40	35.5	7.3
60	31.7	11.1
80	28	14.8
100	24.2	18.6
120	20.6	22.2



Using the LINEST function in Excel, I calculated the values of the slope and the intercept and the uncertainties in those quantities, as shown below:

Slope s (g/cm)	5.339071059	1.036998826	Intercept b (g)
σ_s	0.022056862	0.31792883	σ_b

$$\mathbf{S = 5.34 \pm 0.02}\ \text{g/cm}$$

$$\mathbf{b = 1.0 \pm 0.3}\ \text{g}$$

Slope $s = k/g$, where g is acceleration due to gravity, i.e., 980 cm/s^2

Therefore, $k = sg$

$= 5.34 \times 980$

$= 5233.2\ g/s^2$

$\sigma_k = 0.63 \quad g/s^2$

$k \pm \sigma_k = 5.2E3 \pm 0.6 \quad g/s^2$

VI-2

mT(g)	N	T	T^2
48.7	89.75	0.6685	0.4469
48.7	96.25	0.6234	0.3884
48.7	97.75	0.6138	0.3768
68.7	82.75	0.7251	0.5257
68.7	82.75	0.7251	0.5257
88.7	72.75	0.8247	0.6802
88.7	72.75	0.8247	0.6802
88.7	72.75	0.8247	0.6802

mT(g)	N	T	T^2
108.7	65.75	0.9154	0.8327
108.7	65.75	0.9154	0.8327
108.7	65.75	0.9154	0.8327
128.7	60.75	0.9876	0.9755
128.7	60.25	0.9958	0.9917
128.7	60.25	0.9958	0.9917