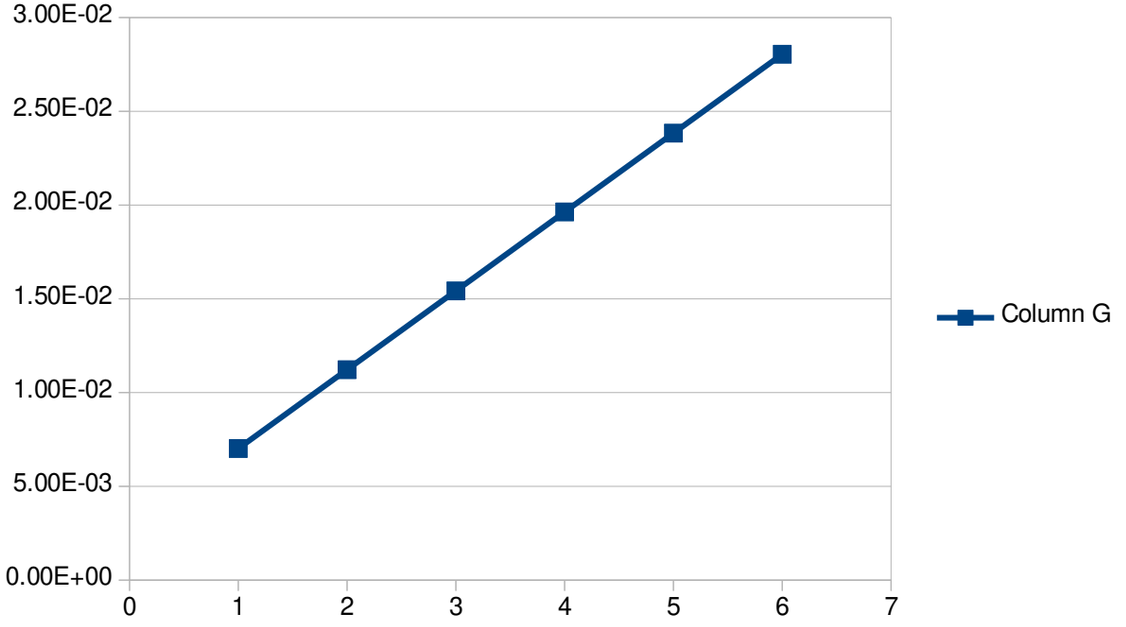
Single Slit diffraction and determine Wavelength (He-Ne laser)

a (distance from slit to width) = (106.9 – 35.6) = 71.3

Table for angular separation

SL.NO	Order(n)	Left (L)(mm)	Rigth(R)(mm)	Mean l = (L + R) / 2	Θ = tan-1(l / a)	Sin(θ)
1	1	5	5	5	7.01E-03	7.01E-03
2	2	8	8	8	1.12E-02	1.12E-02
3	3	11	11	11	1.54E-02	1.54E-02
4	4	14	14	14	1.96E-02	1.96E-02
5	5	17	17	17	2.38E-02	2.38E-02
6	6	20	20	20	2.80E-02	2.80E-02



Slope of the graph = 0.004205446907806

Table for slit width

SL.NO	Left			Rigth				
	M.S.R	V.S.R	value (cm)	M.S.D	V.S.D	value (cm	Differnce	Mean
1	8.5	0	8.5	8.5	16	8.66	0.16	
2	8.5	0	8.5	8.5	15	8.65	0.15	
3	8.5	0	8.5	8.5	16	8.66	0.16	
4	8.5	2	8.52	8.5	15	8.65	0.13	
								0.15

Mean slit width in (mm): 0.15

Wavelength of the source (in nm): 630.81703617096