

	A	B	C	D	E	F	G	H
1	Phys 1102/1220 - Richmond Campus			DISCLAIMER: These example data are purposefully				
2	Experiment 1: Prism Spectrometer			inaccurate. You may test your spreadsheet equations				
3	Your name, Partner's Name			for correctness using these values, but your real				
4	Date			experimental values will be very different.				
5								
6	DATA							
7	Refracting angle of the prism							
8	α (deg)	$\delta\alpha$ (deg)	$\delta\alpha/\alpha$					
9	60	0.1	0.2%					
10								
11	Spectral lines of helium		Position at min deviation			Position of central image		
12	Colour	λ (nm)	P_Dm (deg)	δP_{Dm} (deg)	$\delta P/P_{Dm}$	P_C (deg)	δP_C (deg)	$\delta P/P_C$
13	Red	667.8	106	0.02	0.02%	37.5	0.02	0.05%
14	Yellow	587.6	106	0.02	0.02%	36.4	0.02	0.05%
15	Green	501.6	107	0.02	0.02%	35.5	0.02	0.06%
16	Greenish-Blue	492.3	107.1	0.02	0.02%	35.9	0.02	0.06%
17	Blue	471.3	107.3	0.02	0.02%	35.2	0.02	0.06%
18	Violet	447.1	107.8	0.02	0.02%	34.8	0.02	0.06%
19								
20	CALCULATIONS							
21	Refracting angle, in radians							
22	α (radians)	$\delta\alpha$ (radians)	$\delta\alpha/\alpha$					
23	1.047197551	0.001745329	0.2%					
24								
25	Spectral lines of helium		Angles of min deviation			Angles of min deviation, in radians		
26	Colour	λ (nm)	Dm (deg)	δDm (deg)	$\delta Dm/Dm$	Dm (rad)	δDm (rad)	$\delta Dm/Dm$
27	Red	667.8	68.5	0.028284271	0.04%	1.195550538	0.000493654	0.04%
28	Yellow	587.6	69.6	0.028284271	0.04%	1.214749159	0.000493654	0.04%
29	Green	501.6	71.5	0.028284271	0.04%	1.247910415	0.000493654	0.04%
30	Greenish-Blue	492.3	71.2	0.028284271	0.04%	1.242674427	0.000493654	0.04%
31	Blue	471.3	72.1	0.028284271	0.04%	1.258382391	0.000493654	0.04%
32	Violet	447.1	73	0.028284271	0.04%	1.274090354	0.000493654	0.04%
33								
34	Spectral lines of helium		Index of refraction					
35	Colour	λ (nm)	n	δn	$\delta n/n$			
36	Red	667.8	1.801396479	0.001976231	0.11%			
37	Yellow	587.6	1.809654105	0.002003224	0.11%			
38	Green	501.6	1.823524087	0.00204947	0.11%			
39	Greenish-Blue	492.3	1.821367322	0.0020422	0.11%			
40	Blue	471.3	1.827800109	0.002063972	0.11%			
41	Violet	447.1	1.834120149	0.002085633	0.11%			
42								
43	UNCERT SUB-CALCS							
44	$\partial n/\partial Dm$	$[\partial n/\partial Dm]*\delta Dm$	$\partial n/\partial \alpha$	$[\partial n/\partial \alpha]*\delta \alpha$				
45	0.434445257	0.000214465	-1.125609855	-0.00196456				
46	0.425779292	0.000210188	-1.141427135	-0.001992166				
47	0.410718853	0.000202753	-1.168499331	-0.002039416				
48	0.41310443	0.000203931	-1.16424594	-0.002031992				
49	0.405939269	0.000200393	-1.176982058	-0.002054221				
50	0.398749069	0.000196844	-1.189645574	-0.002076323				