	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Your name		Date												
2	Partner's name														
3															
4	**Phys 1101/1120 - Surrey Campus**				**DISCLAIMER: These example data are purposefully**										
5	**Expt. 4: Hooke's Law**				**inaccurate. You may test your spreadsheet equations**										
6					**for correctness using these values, but your real**										
7	**DATA**				**experimental values will be very different.**										
8	Hanger and added masses are														
9	weighed together for Total Mass														
10	**Total Mass:**				**Extension (adding masses):**				**Extension (removing masses):**				**Accel. due to gravity**		
11	**m (g)**	**dm (g)**	**(dm/m)**		**x (cm)**	**dx (cm)**	**(dx/x)_1**		**x (cm)**	**dx (cm)**	**(dx/x)_2**		**g (m/s^2)**	**dg (m/s^2**	**dg/g**
12	**101**	**0.05**	0.05%		**1**	**0.1**	10.00%		**1.1**	**0.1**	9.09%		**9.81**	**0.01**	0.10%
13	**121**	**0.05**	0.04%		**2**	**0.1**	5.00%		**2.1**	**0.1**	4.76%				
14	**141**	**0.05**	0.04%		**3**	**0.1**	3.33%		**2.9**	**0.1**	3.45%				
15	**161**	**0.05**	0.03%		**4**	**0.1**	2.50%		**3.9**	**0.1**	2.56%				
16	**181**	**0.05**	0.03%		**5**	**0.1**	2.00%		**5.1**	**0.1**	1.96%				
17	**201**	**0.05**	0.02%		**6**	**0.1**	1.67%		**6.1**	**0.1**	1.64%				
18	**221**	**0.05**	0.02%		**7**	**0.1**	1.43%		**7.1**	**0.1**	1.41%				
19	**241**	**0.05**	0.02%		**8**	**0.1**	1.25%		**7.9**	**0.1**	1.27%				
20															
21	**CALCULATIONS - PART A:**								**NOTE:** In this case, uncertainty based on						
22									x_ave = (x1 + x2) / 2, NOT standard deviation						
23	**Total mass:**				**Force:**				**Average extension:**						
24	**M (kg)**	**dM (kg)**	**dM/M**		**W (N)**	**dW (N)**	**dW/W**		**x_ave (m)**	**dx_ave (m)**	**(dx/x)_ave**				
25	0.101	0.00005	0.05%		0.99081	0.001123	0.11%		0.0105	0.0007071	6.73%				
26	0.121	0.00005	0.04%		1.18701	0.001306	0.11%		0.0205	0.0007071	3.45%				
27	0.141	0.00005	0.04%		1.38321	0.001493	0.11%		0.0295	0.0007071	2.40%				
28	0.161	0.00005	0.03%		1.57941	0.001683	0.11%		0.0395	0.0007071	1.79%				
29	0.181	0.00005	0.03%		1.77561	0.001875	0.11%		0.0505	0.0007071	1.40%				
30	0.201	0.00005	0.02%		1.97181	0.002069	0.10%		0.0605	0.0007071	1.17%				
31	0.221	0.00005	0.02%		2.16801	0.002264	0.10%		0.0705	0.0007071	1.00%				
32	0.241	0.00005	0.02%		2.36421	0.002459	0.10%		0.0795	0.0007071	0.89%				