

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Your name		Date													
2	Partner's name															
3																
4	Phys 1101/1120 - Surrey campus			DISCLAIMER: These example data are purposefully												
5	Expt. 8: Resonance of a String			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																
9	String density:			Internodal distances:												
10	μ (kg/m)	$d\mu$ (kg/m)	$d\mu/\mu$	d1 (cm)	$\delta d1$ (cm)	$(\delta d/d)_1$	d2 (cm)	$\delta d2$ (cm)	$(\delta d/d)_2$	d3 (cm)	$\delta d3$ (cm)	$(\delta d/d)_3$	d4 (cm)	$\delta d4$ (cm)	$(\delta d/d)_4$	
11	0.007	0	0.00%	150	1	0.67%	no data	no data	no data	no data	no data	no data	no data	no data	no data	
12				74	1	1.35%	76	1	1.32%	no data	no data	no data	no data	no data	no data	
13	Hanging Mass:			49	1	2.04%	50	1	2.00%	50	1	2.00%	no data	no data	no data	
14	m (g)	dm (g)	dm/m	38	0.8	2.11%	38	0.8	2.11%	37	0.8	2.16%	37	0.8	2.16%	
15	300	0.05	0.02%	30	0.5	1.67%	30	0.5	1.67%	31	0.5	1.61%	29	0.5	1.72%	
16				24	0.5	2.08%	25	0.5	2.00%	24	0.5	2.08%	26	0.5	1.92%	
17	Acceleration due to gravity:			20	0.3	1.50%	21	0.3	1.43%	20	0.3	1.50%	21	0.3	1.43%	
18	g (m/s ²)	dg (m/s ²)	dg/g	19	0.3	1.58%	18	0.3	1.67%	17	0.3	1.76%	18	0.3	1.67%	
19	9.81	0.01	0.10%													
20				d5 (cm)	$\delta d5$ (cm)	$(\delta d/d)_5$	d6 (cm)	$\delta d6$ (cm)	$(\delta d/d)_6$	d7 (cm)	$\delta d7$ (cm)	$(\delta d/d)_7$	d8 (cm)	$\delta d8$ (cm)	$(\delta d/d)_8$	
21	Frequency of standing wave:			no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	
22	f (Hz)	df (Hz)	df/f	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	
23	7	2	28.57%	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	
24	14	2	14.29%	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	
25	21	2	9.52%	30	0.5	1.67%	no data	no data	no data	no data	no data	no data	no data	no data	no data	
26	27	1	3.70%	26	0.5	1.92%	25	0.5	2.00%	no data	no data	no data	no data	no data	no data	
27	34	1	2.94%	21	0.3	1.43%	20	0.3	1.50%	20	0.3	1.50%	no data	no data	no data	
28	41	1	2.44%	18	0.3	1.67%	17	0.3	1.76%	19	0.3	1.58%	19	0.3	1.58%	
29	48	0.5	1.04%													
30	54.5	0.5	0.92%													
31																
32																
33	CALCULATIONS:															
34																
35	Hanging Mass:															
36	m (kg)	dm (kg)	dm/m													
37	0.3	0.00005	0.02%													
38																
39	Theoretical speed of waves:															
40	v _{th} (m/s)	dv _{th} (m/s)	dv _{th} /v _{th}													
41	20.50435	0.0105895	0.05%	Note: Standard deviation used for uncertainties where n>2.												
42				Average calculation used for uncertainties where n=2 or less.												
43	Frequency of standing wave:			Average internodal distances:			Inverse of wavelength:									
44	f (Hz)	df (Hz)	df/f	d (m)	δd (m)	$\delta d/d$	$1/\lambda$ (1/m)	$d[1/\lambda]$ (1/m)	$d[1/\lambda]/[1/\lambda]$							
45	7	2	28.57%	1.5	0.01	0.67%	0.333333	0.00222222	0.67%							
46	14	2	14.29%	0.75	0.00707	0.94%	0.666667	0.00628539	0.94%							
47	21	2	9.52%	0.4967	0.00667	1.34%	1.006711	0.0135129	1.34%							
48	27	1	3.70%	0.375	0.00577	1.54%	1.333333	0.02052801	1.54%							
49	34	1	2.94%	0.3	0.00632	2.11%	1.666667	0.03513642	2.11%							
50	41	1	2.44%	0.25	0.0073	2.92%	2	0.05842374	2.92%							
51	48	0.5	1.04%	0.2043	0.00404	1.98%	2.447552	0.04841066	1.98%							
52	54.5	0.5	0.92%	0.1813	0.0059	3.26%	2.758621	0.0898126	3.26%							