	A	B	C	D	E	F	G
1	**Phys 1102/1220 - Richmond Campus**			**DISCLAIMER: These example data are purposefully**			
2	**Experiment 12: Determination of e/m**			**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	**Diameter of beam**				**Constant, from eq. 10**		
8	**d (cm)**	**δd (cm)**	**δd/d**		**k (T^2/A^2)**	**δk (T^2/A^2)**	**δk/k**
9	**13.5**	**0.05**	0.4%		6.073E-07	0	0.0%
10							
11	**e/m Apparatus Measurements**						
12	**Measured currents**			**Measured voltages**			
13	**I (A)**	**δI (A)**	**δI/I**	**V (V)**	**δV (V)**	**δV/V**	
14	**1.02**	0.0204	**2.0%**	**250.5**	1.2525	**0.5%**	
15	**1.14**	0.0228	**2.0%**	**312.3**	1.5615	**0.5%**	
16	**1.29**	0.0258	**2.0%**	**410.7**	2.0535	**0.5%**	
17	**1.4**	0.028	**2.0%**	**475**	2.375	**0.5%**	
18	**1.54**	0.0308	**2.0%**	**581**	2.905	**0.5%**	
19	**1.65**	0.033	**2.0%**	**669**	3.345	**0.5%**	
20	**1.74**	0.0348	**2.0%**	**739**	3.695	**0.5%**	
21	**1.79**	0.0358	**2.0%**	**787**	3.935	**0.5%**	
22							
23	**CALCULATIONS**						
24	**Diameter of beam**				**Radius of beam**		
25	**d (m)**	**δd (m)**	**δd/d**		**r (m)**	**δr (m)**	**δr/r**
26	0.135	0.0005	0.4%		0.0675	0.00025	0.4%
27							
28	**Current squared**						
29	**I^2 (A^2)**	**δI^2 (A^2)**	**δI^2 %**				
30	1.0404	0.041616	4.0%				
31	1.2996	0.051984	4.0%				
32	1.6641	0.066564	4.0%				
33	1.96	0.0784	4.0%				
34	2.3716	0.094864	4.0%				
35	2.7225	0.1089	4.0%				
36	3.0276	0.121104	4.0%				
37	3.2041	0.128164	4.0%				
38							
39	**Slope of graph of eq. 10, from Linegraph V2**				**Experimental e/m**		
40	**s (V/A^2)**	**δs (V/A^2)**	**δs/s**		**e/m (C/kg)**	**δ[e/m] (C/kg)**	**δ[e/m]/[e/m]**
41	247.3505375	3.855037248	1.6%		1.78785E+11	3.08513E+09	1.7%
42							
43	**UNCERT SUB-CALCS**						
44	**∂[e/m]/∂s**	**∂[e/m]/∂r**					
45	7.228E+08	-5.297E+12					