Solution: Exp. problem 1

Task 1 Points

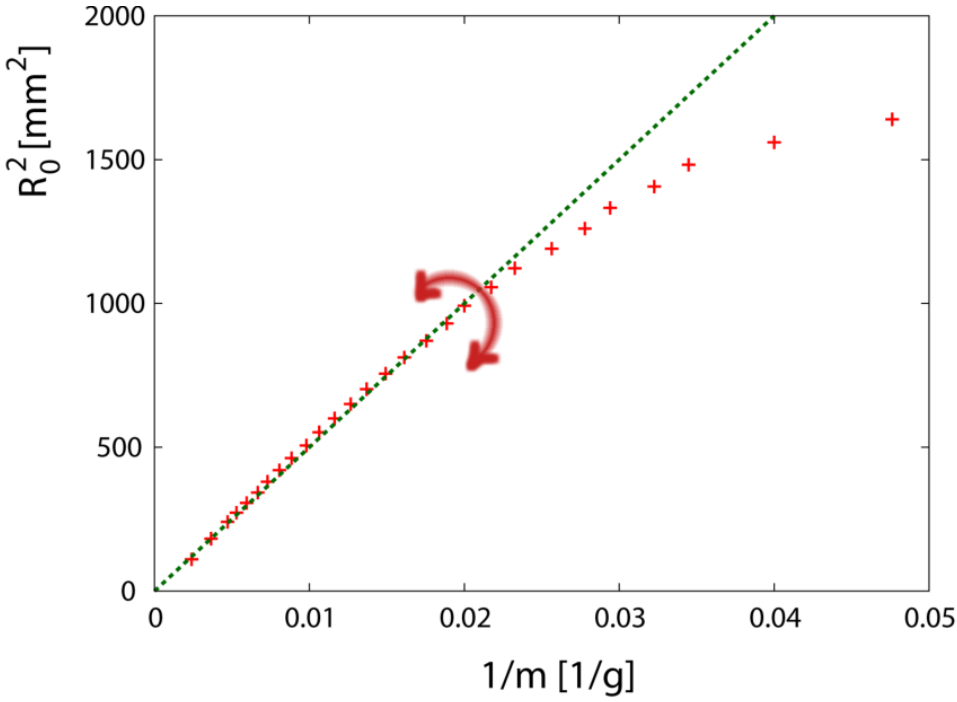
(a) 0.95

m[g]	**R_0[mm]**
21	40.5
25	39.5
29	38.5
31	37.5
34	36.5
36	35.5
39	34.5
43	33.5
46	32.5
50	31.5
53	30.5
57	29.5
62	28.5
67	27.5
73	26.5
79	25.5
86	24.5
94	23.5
102	22.5
113	21.5
124	20.5
137	19.5
150	18.5
168	17.5
189	16.5
212	15.5
274	13.5
417	10.5

0.95

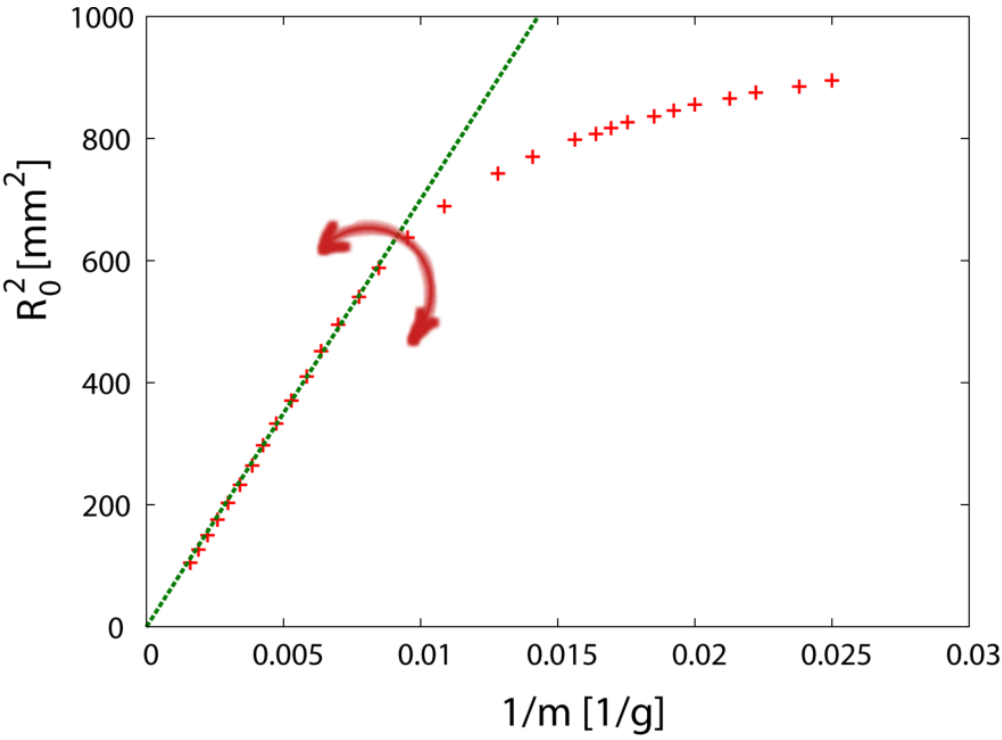
m[g]	R_0[mm]
40	29.9
42	29.8
45	29.6
47	29.4
50	29.3
52	29.1
54	28.9
57	28.8
59	28.6
61	28.4
64	28.3
71	27.8
78	27.3
92	26.3
105	25.3
118	24.3
129	23.3
143	22.3
157	21.3
171	20.3
189	19.3
211	18.3
235	17.3
259	16.3
293	15.3
336	14.3
386	13.3
449	12.3

(b) 1.4



a = 50000 g mm^2

(b) 1.4



a = 70000 g mm^2

(b) 0.5

$$\kappa = \frac{2ag}{\pi l} = 1.5\,\mathrm{mJ}$$

0.5

$$\kappa = \frac{2ag}{\pi l} = 1.5\,\mathrm{mJ}$$

0.5

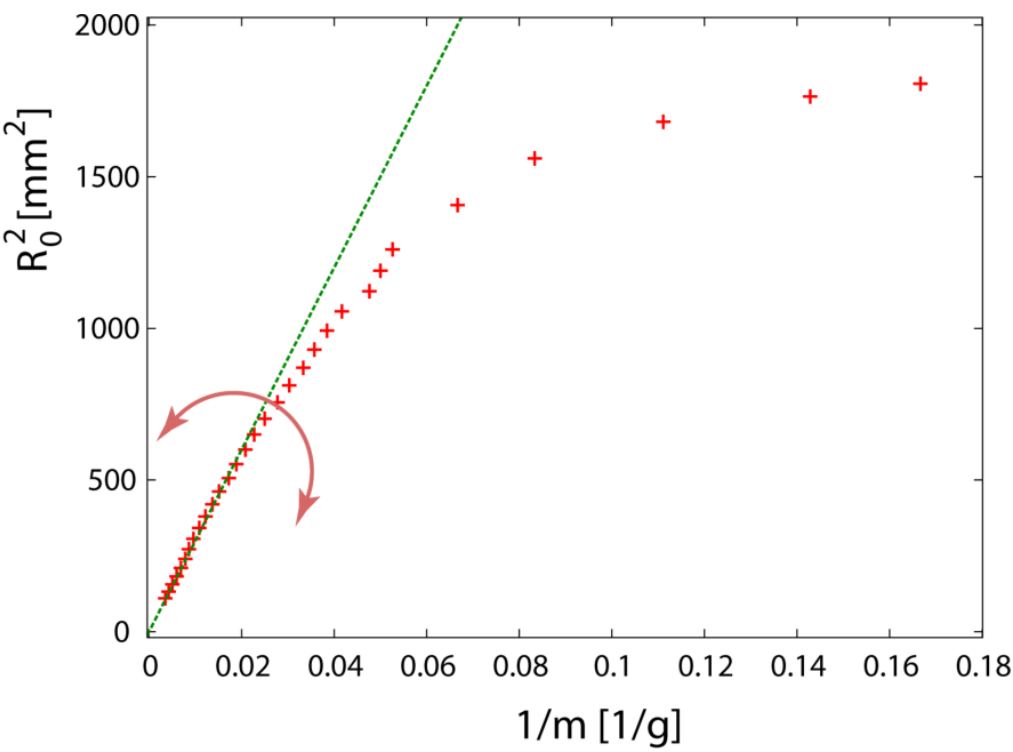
$$\frac{R_0}{R_c} \leq 0.70 \qquad \frac{R_0}{R_c} \leq 0.77$$

Task 2 Points

0.9

m[g]	R_0[mm]
6	42.5
7	42.
9	41.
12	39.5
15	37.5
19	35.5
20	34.5
21	33.5
24	32.5
26	31.5
28	30.5
30	29.5
33	28.5
36	27.5
40	26.5
44	25.5
48	24.5
53	23.5
58	22.5
66	21.5
73	20.5
82	19.5
92	18.5
104	17.5
116	16.5
127	15.5
145	14.5
168	13.5

0.9



$a = 27000$ g mm^2

1.0

$\kappa = 0.8$ mJ

Task 3	Points
Young modulus of the blue foil:	0.6
Y=2.0 GPa	Y=2.0 GPa
Young modulus of the colorless foil:	0.4
Y=2.5 GPa	
Total:	10