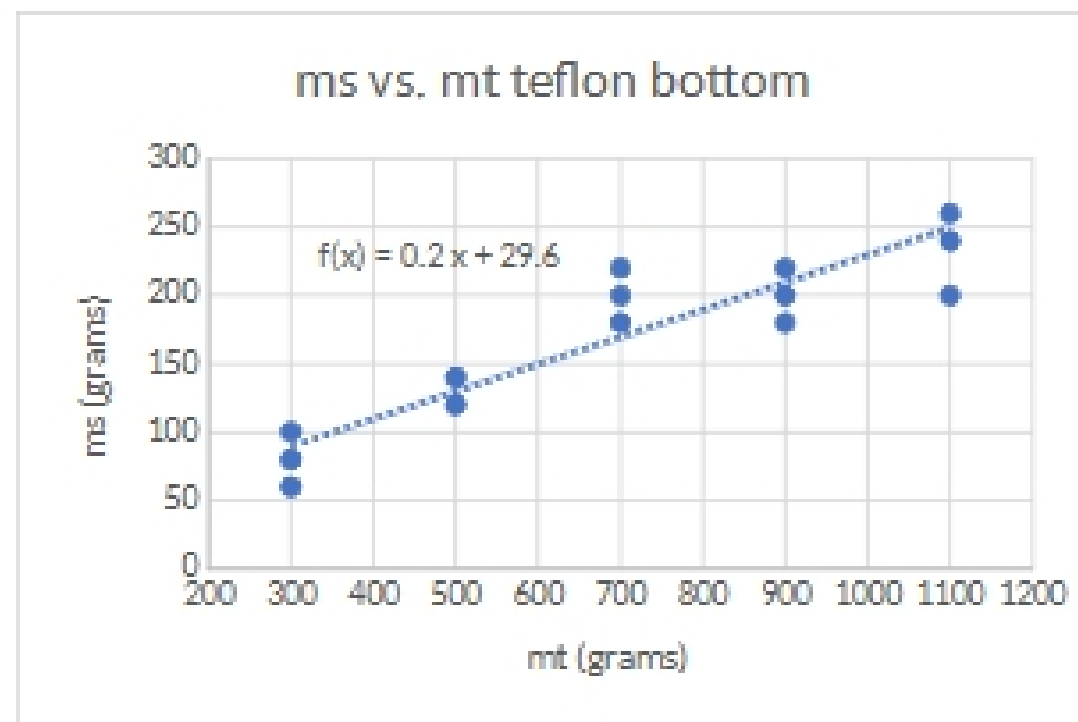


VI-1

Teflon bottom pan = 100 g

m	mt	ms	
200	300	60	
200	300	80	
200	300	60	
200	300	80	
200	300	100	
400	500	120	
400	500	140	
400	500	120	
400	500	140	
400	500	140	
600	700	180	
600	700	200	
600	700	200	
600	700	220	
600	700	180	
800	900	200	
800	900	180	
800	900	200	
800	900	220	
800	900	220	
1000	1100	240	
1000	1100	200	
1000	1100	240	
1000	1100	260	
1000	1100	260	
slope	0.2	29.6	intercept
slop unc	0.015671	11.83098	unc intercept



$$mt = m + 100$$

$$200 + 100 = 300 \text{ g}$$

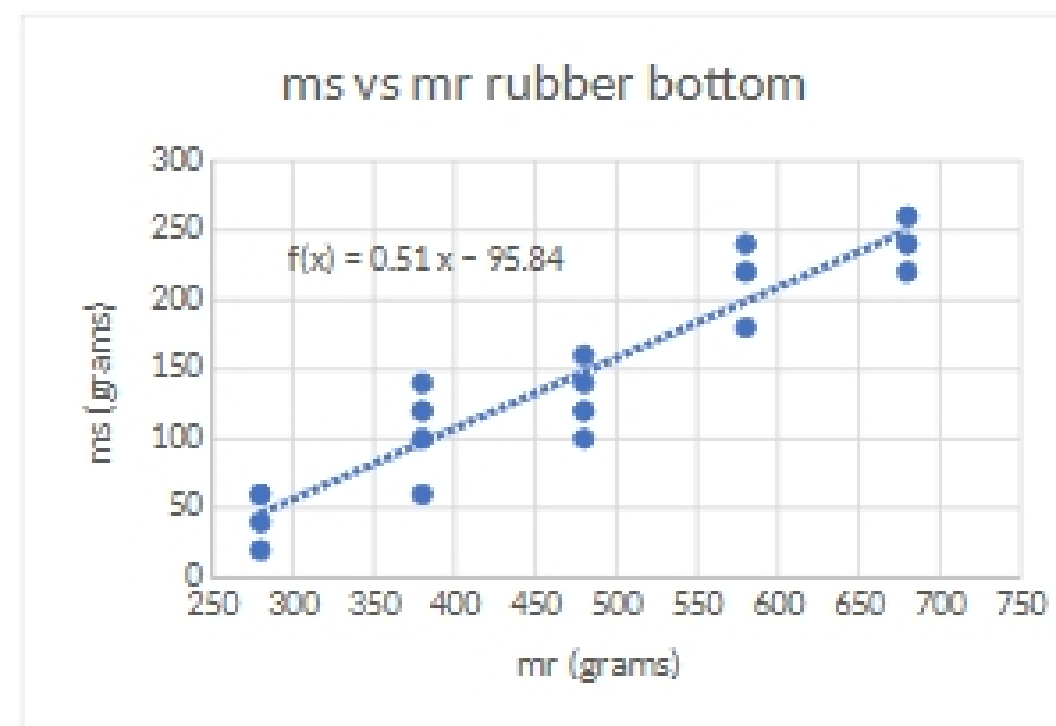
$$\text{Slope} = \mu_k = 0.2$$

$$\text{Slope unc} = \sigma_{\mu_k} = 0.015671$$

$$\mu_k \pm \sigma_{\mu_k} = 0.2 \pm 0.016$$

VI-2

Rubber bottom pan = 180 g



m	mr	ms	
100	280	40	
100	280	40	
100	280	60	
100	280	20	
100	280	60	
200	380	100	
200	380	120	
200	380	60	
200	380	140	
200	380	120	
300	480	140	
300	480	100	
300	480	120	
300	480	160	
300	480	120	
400	580	220	
400	580	220	
400	580	180	
400	580	240	
400	580	220	
500	680	260	
500	680	240	
500	680	220	
500	680	240	
500	680	260	
slope	0.508	-95.84	intercept
slope unc	0.0351	17.56396	intercept unc

$$mr = m + 180$$

$$100 + 180 = 280 \text{ g}$$

$$\text{Slope} = \mu_k = 0.508$$

$$\text{Slope unc} = \sigma_{\mu_k} = 0.0351$$

$$\mu_k \pm \sigma_{\mu_k} = 0.51 \pm 0.035$$

VI-3

$$L = 57.3 \text{ cm}$$

$$d = 17.5 \text{ cm}$$

m	mt	H	y	theta	coefficient of static friction
200	300	30.5	13	13.113224	0.232891
400	500	30.2	12.7	12.805405	0.227286
600	700	34.2	16.7	16.944697	0.304676
800	900	33.8	16.3	16.527034	0.296727
1000	1100	37.4	19.9	20.32195	0.370347
AVERAGE:					0.2863854
SD:					0.052622115

$$y = H + L$$

$$y = 30.95 + 57.3 = 13 \text{ cm}$$

$$\theta = \sin^{-1}\left(\frac{y}{L}\right) = \sin^{-1}(13/57.3) = 13.11^\circ$$

$$\mu_s = \tan(\theta_c) = \tan(13.113224) = 0.232891$$

$$\mu_s \pm \sigma_{\mu_s} = 0.286 \pm 0.0526$$

VI-4

m	mt	H	y	theta	coefficient of static friction
100	280	48.9	31.4	33.229434	0.655105
200	380	34.7	17.2	17.468086	0.314685
300	480	44.4	26.9	27.999184	0.531687
400	580	41.6	24.1	24.872055	0.463582
500	680	40.9	23.4	24.102919	0.447383
AVERAGE:					0.4824884
SD:					0.111323686

The same calculations were used in VI-4 as was used in VI-3 above.

$$\mu_s \pm \sigma_{\mu_s} = 0.482 \pm 0.111$$