

# VI-1

The distance between point B and point F was 84.8 cm

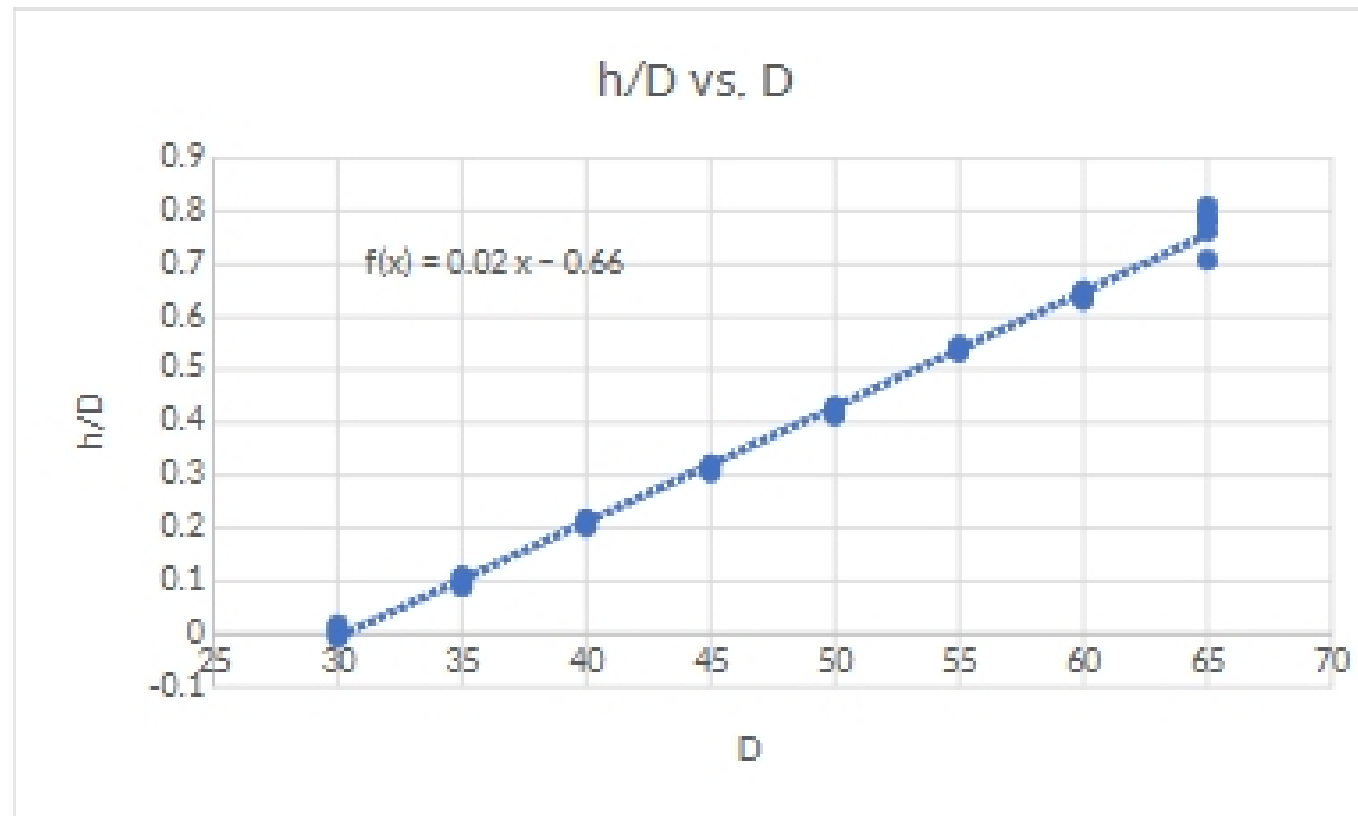
H = 105.5 cm S = 33.5 cm  $\sigma_s = 0.1$  cm

$\theta_m = 30^\circ$   $\theta_m = 33^\circ$   $\theta_m = 30^\circ$

30	0.0	0
30	0.3	0.01
30	-0.2	-0.00667
30	0.1	0.003333
30	0.5	0.016667
35	3.1	0.088571
35	3.4	0.097143
35	3.7	0.105714
35	3.7	0.105714
35	3.8	0.108571
40	8.1	0.2025
40	8.5	0.2125
40	8.6	0.215
40	8.7	0.2175
40	8.5	0.2125
45	13.8	0.306667
45	14.0	0.311111
45	14.0	0.311111
45	14.2	0.315556
45	14.4	0.32
50	20.7	0.414
50	20.8	0.416
50	21.1	0.422
50	21.3	0.426
50	21.5	0.43
55	29.4	0.534545
55	29.5	0.536364
55	29.6	0.538182
55	30.0	0.545455
55	29.4	0.534545
60	39.0	0.65
60	37.9	0.631667
60	38.1	0.635
60	38.1	0.635
60	38.7	0.645
65	46.0	0.707692
65	49.6	0.763077

65	50.9	0.783077
65	51.3	0.789231
65	52.6	0.809231

## VI-2



It does not surprise be that the fact that the line is linear because I expected it.

## VI-3

$$S = 0.021756386 \quad \sigma_s = 0.0002$$

$$b = -0.65844 \quad \sigma_b = 0.01$$

$$b = -\tan\theta$$

$$-0.65844 = -\tan\theta$$

$$0.65844 = \tan\theta$$

$$\tan^{-1}(0.65844) = \theta$$

$$\theta = 33.363^\circ \quad \sigma_\theta = 0.6$$

This value is very similar to the one we measured with the protractor so I am not surprised by the value.

## VI-4

$$V_o = \sqrt{\frac{g}{2S \cos^2 \theta}}$$

$$V_o = \sqrt{\frac{9.81}{2 * 2.1756386 * \cos^2(30)}}$$

$$V_o = \sqrt{\frac{9.81}{2 * 2.1756386 * \cos^2(33)}}$$

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$$V_o = 1.73$$

$$V_o = 1.79$$

$$V_o = 1.73$$

$$\sigma_v = .02$$

## VI-5

$$V_o = \sqrt{2sg}$$

$$V_o = \sqrt{2 * 0.335 * 9.81}$$

$$V_o = 2.56$$

## VI-6