

109A-5

WEST



$$\begin{aligned}x_0 &= 0, y_0 = (0.210 \pm .015) \text{ m} \\v_{0x} &= 0, v_{0y} = 0 \\a_x &= (1.20 \pm .025) \frac{\text{m}}{\text{s}^2} \\a_y &= (-9.8010 \pm .0050) \frac{\text{m}}{\text{s}^2}\end{aligned}$$

DOWN

y-motion

$$y^2 = y_0 + v_{0y}t + \frac{1}{2}a_y t^2$$

$$-y_0 = \frac{1}{2}a_y t^2$$

$$(1) \quad t = \sqrt{-\frac{2y_0}{a_y}}$$

$$t = \sqrt{-\frac{2(0.210 \text{ m})}{-9.8010 \frac{\text{m}}{\text{s}^2}}}$$

$$t = .207 \text{ s}$$

x-motion

$$(2) \quad x = x_0 + v_{0x}t + \frac{1}{2}a_x t^2$$

$$x = \frac{1}{2}(1.20 \frac{\text{m}}{\text{s}^2})(.207 \text{ s})^2$$

$$x = .0257 \text{ m}$$

WITH VARIABLES : Subst (1) INTO (2) \Rightarrow

$$x = \frac{1}{2}a_x \left(\sqrt{-\frac{2y_0}{a_y}} \right)^2$$

$$x = \frac{1}{2}a_x \left(-\frac{2y_0}{a_y} \right)$$

$\rightarrow X$

$$X = -\frac{a_x}{a_y} y_0 = -\frac{1.20 \frac{\text{m}}{\text{s}^2}}{-9.8010 \frac{\text{m}}{\text{s}^2}} (0.210 \text{ m})$$

$$\boxed{X = .0257 \text{ m}}$$

$$X = -\frac{a_x}{a_y} y_0$$

use gauge EP, x1s to eval

$$\text{with: } a_x = (1.20 \pm .025) \frac{\text{m}}{\text{s}^2}$$

$$a_y = (-9.8010 \pm .0050) \frac{\text{m}}{\text{s}^2}$$

$$y_0 = (0.210 \pm .015) \text{ m}$$

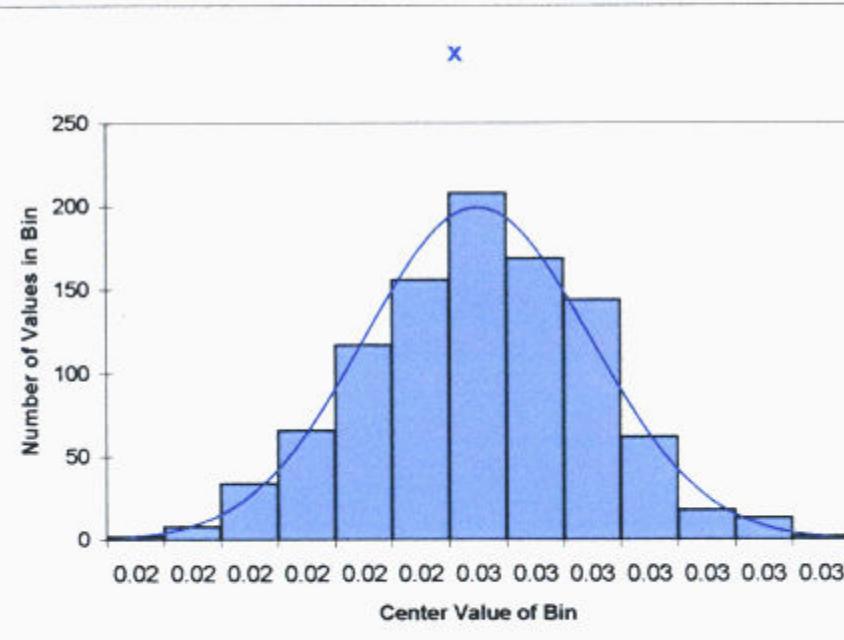
\Rightarrow

$$X = (.0257 \pm .0019) \text{ m}$$

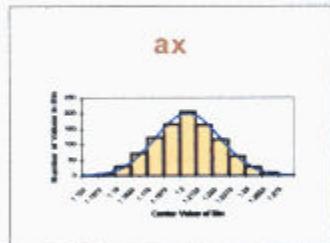
(109A-5) cont

X 3 <-Name of Function followed by Number of Arguments
0.025712 <-Evaluated at means.

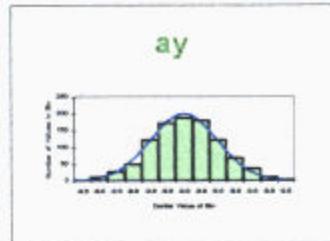
0.029246
0.026583
0.027287
0.022606
0.022926
0.022668
0.026469
0.025219
0.024791
0.025266
0.03073
0.025761
0.026347
0.025439
0.023111
0.026952
0.020951
0.026037
0.027065
0.024229
0.025198
0.029723
0.022974
0.02542
0.02347
0.02411
0.023463
0.025773
0.022876



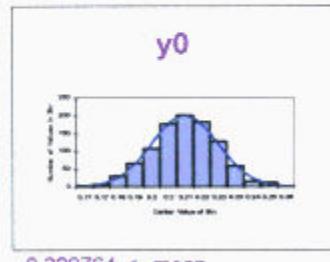
0.025679115 <-Mean
0.001908561 <-Standard Deviation



1.199761 <-mean
0.025182 <-standard deviation



-9.80067 <-mean
0.005025 <-standard deviation



0.209764 <-mean
0.014886 <-standard deviation