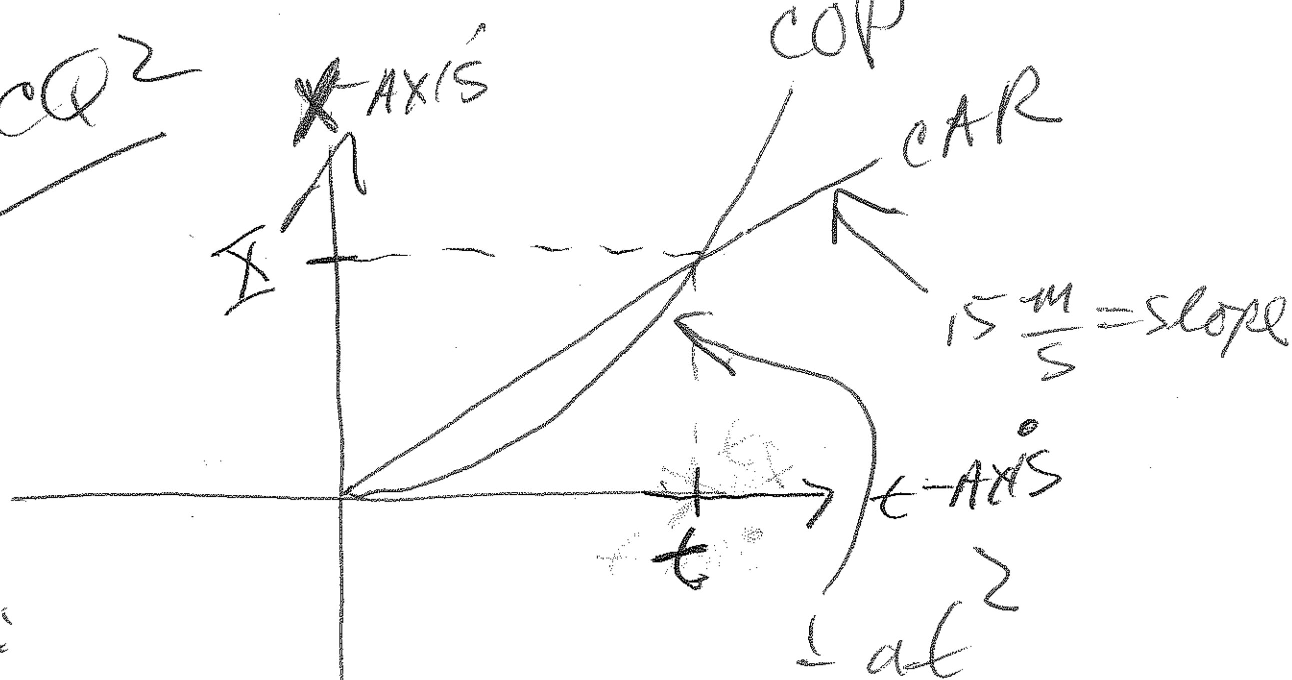
2-6-13

ICQ 2



NOTE:

$30\frac{m}{s} \cdot \frac{3600s}{h} \cdot \frac{km}{1000m} \cdot \frac{0.6214mi}{km} = \boxed{67mph}$ = speed of cop.

Solutions: $X_{CAR} = X_{cop} = X$

(a) $15\frac{m}{s}t = \frac{1}{2}\left(2\frac{m}{s^2}\right)t^2$ (2) PT

$0 = 15t - t^2$

$0 = t\cdot(15 - t)$

$t=0$ or $t = 15$ s (1) PT

(assume $a = 2.0\frac{m}{s^2}$)

Possible test question:
(A) WHAT IS MAXIMUM distance between CAR AND COP?
(B) How long for cop speed to be $3.25\frac{m}{s}$?

(b) $X_{cop} = \frac{1}{2}at^2$; THUS $V_{cop} = \frac{dx}{dt} = at$

$V_{cop} = \left(2.0\frac{m}{s^2}\right)(15s) = \boxed{3.0\times10^1\frac{m}{s}}$ (1 PT) (1 PT) (1 PT)

I CQ 3

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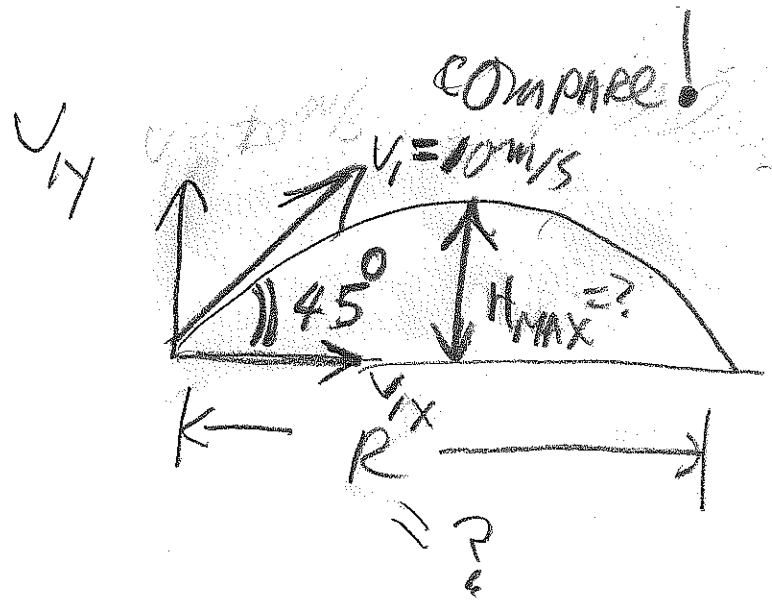


new problem

(a) $H_{max} = ?$

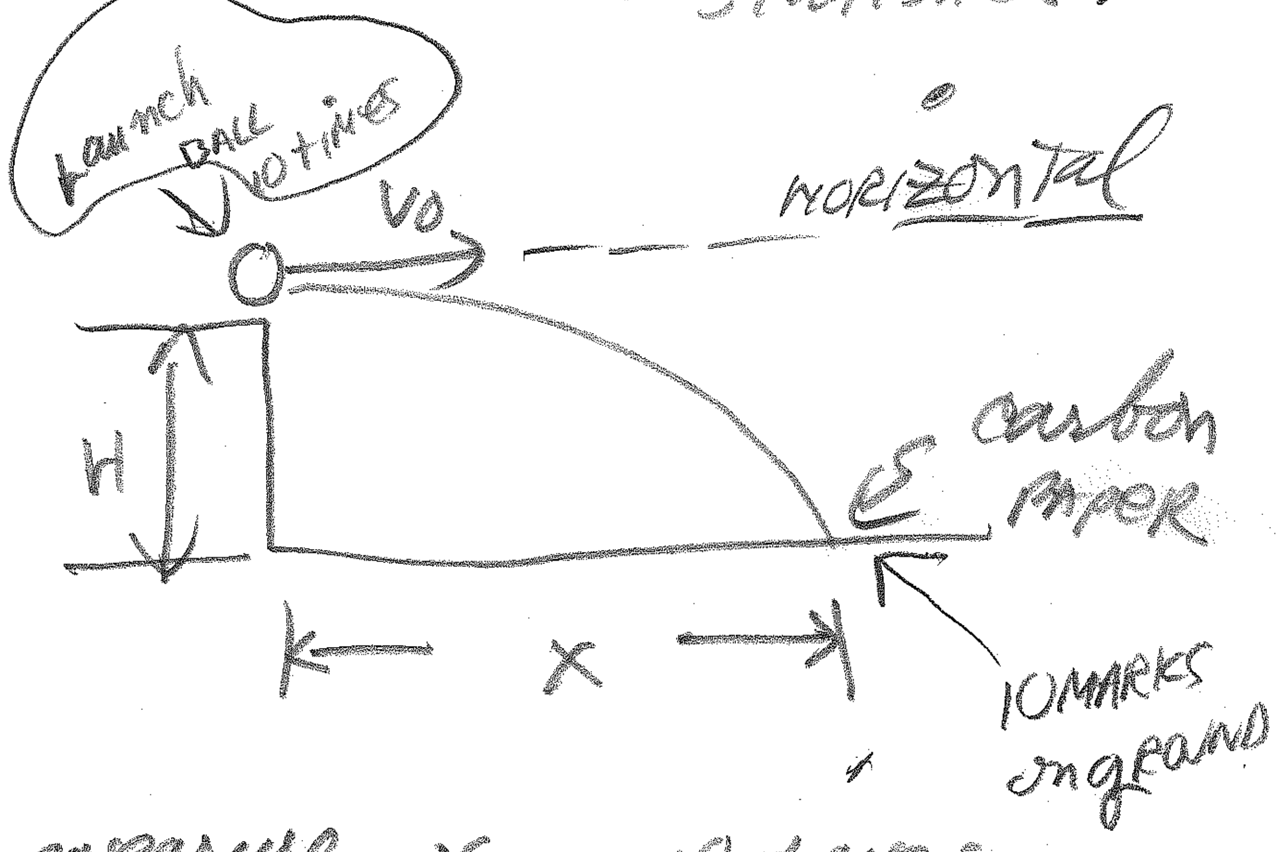
(b) $R = ?$

(c) compare with previous example: explain difference between H_{max} and 5m and difference between R/2 and 10 (m).

next time — "real" experiment —

NEW ways to learn about

physics and statistics:



measure X 10 times.

FIND $\bar{X}$ and S.D. ← standard deviation

measure V_0 using photogate.

$X_{TH} = V_0 \cdot t = V_0 \cdot \sqrt{\frac{2H}{g}}$ * $\frac{1}{2}gt^2 = H$ *

↖ THEORETICAL X.

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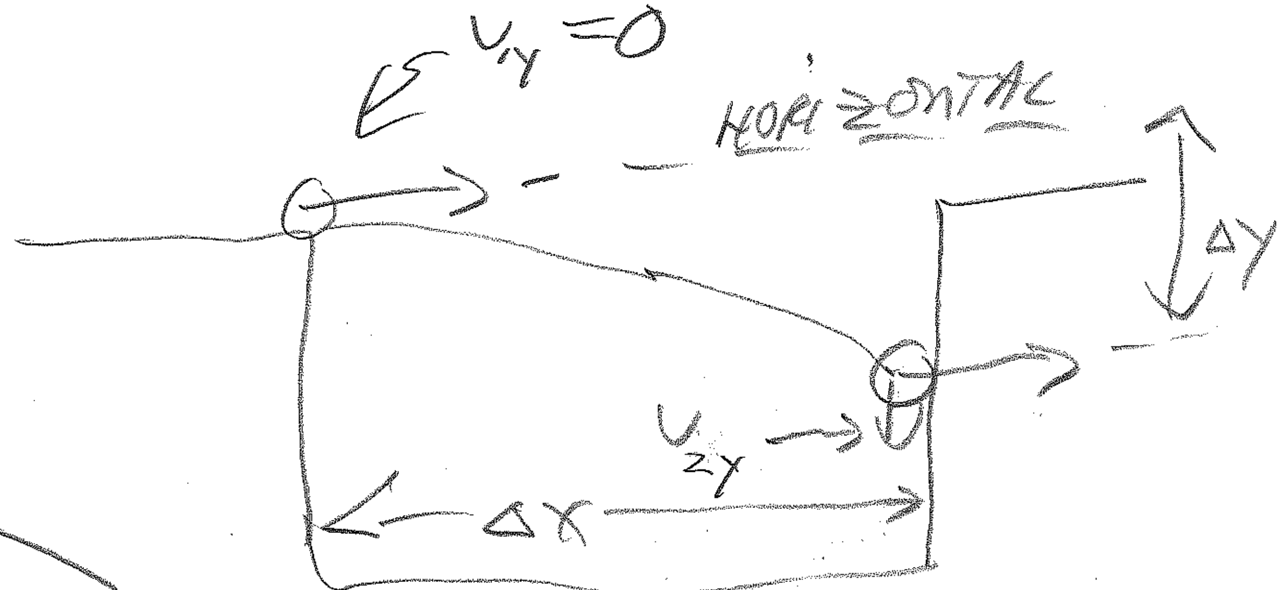
Lab 2

simulation lab: problem 1 ~

comments on Question 2:



HINT: $V_{2y} \neq \frac{\Delta Y}{\Delta t}$

compare: $-g\Delta t$ with V_{2y} you get FROM formula with ΔY and Δt.

$V_{2y} = -g \cdot t$ (the book)

$V_{2y} = -g \Delta t$

Hint: $\Delta t \neq .64(s)$

Also you can get V_{2y} from ΔY using $\bar{V}_y = \frac{\Delta Y}{\Delta t}$ ← measure on screen

NOTE: $V_{1y} = 0$ } CH 2 OR CH 3 get formula for $\bar{V}_y$ in terms of V_{1y} and V_{2y} $\Rightarrow$ solve for V_{2y} in terms of Δy, Δt