

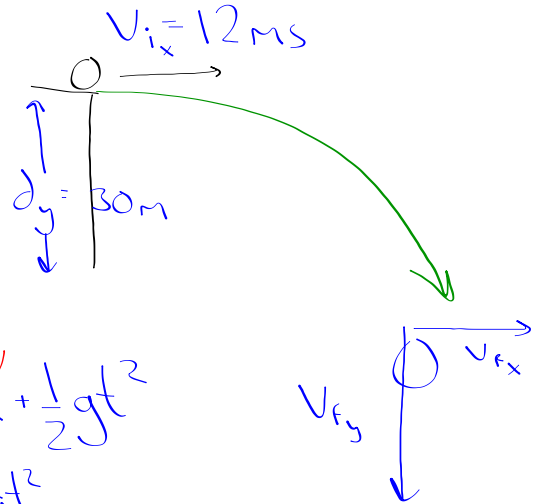
Erica Kicks soccer ball off ledge

$v_i = 12 \text{ m/s}$
 $d_y = 30 \text{ m}$

A.) $t = ?$

$g = 9.8 \text{ m/s}^2$

$v_{iy} = 0 \text{ m/s}$



$d_y = \cancel{v_i t} + \frac{1}{2} g t^2$

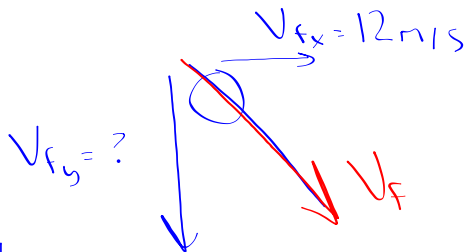
$d_y = \frac{1}{2} g t^2$

$\sqrt{\frac{2d_y}{g}} = t$

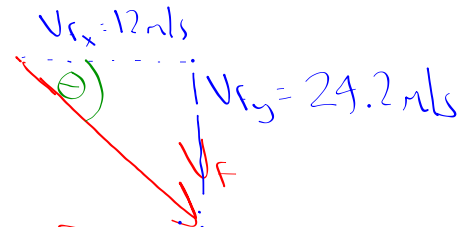
$t = \sqrt{\frac{2(30)}{9.8}}$

$t = 2.47 \text{ s}$

B.)



$v_{fy} = \cancel{v_{iy}} + gt$
 $v_{fy} = (9.8)(2.47 \text{ s})$
 $v_{fy} = 24.2 \text{ m/s}$

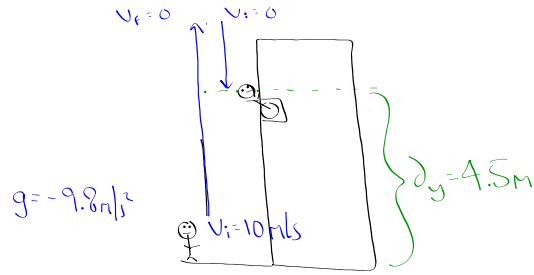


$v_f = \sqrt{12^2 + 24.2^2}$

$v_f = 27 \text{ m/s}$

$\tan \theta = \frac{24.2}{12}$

$\theta = 63.6^\circ \text{ S}$



Find t_{up} :

$$0 = V_i + gt$$

$$-V_i = t$$

$$\frac{-10}{-9.8} = t$$

$$t_{up} = 1.02s$$

Find $d_{y\ up}$

$$V_f^2 = V_i^2 + 2gd$$

$$d_y = \frac{-V_i^2}{2g} = \frac{-(10^2)}{2(-9.8)}$$

$$d_{y\ up} = 5.1m$$

Find $d_{y\ down}$

$$5.1 - 4.5m$$

$$d_{y\ down} = 0.6m$$

Find t_{down}

$$d_y = V_i t + \frac{1}{2}gt^2$$

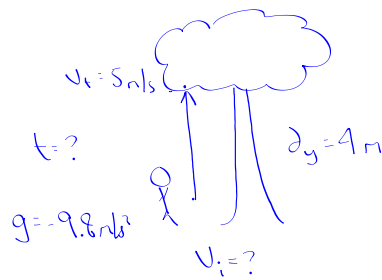
$$t = \sqrt{\frac{2d_y}{g}}$$

$$t = \sqrt{\frac{2(0.6)}{9.8}}$$

$$t_{down} = 0.35s$$

$$t_{total} = 1.02 + 0.35$$

$$t_{total} = 1.37s$$



$$V_f = V_i + gt$$

$$V_f^2 = V_i^2 + 2gd$$

Find V_i :

$$V_i = \sqrt{V_f^2 - 2gd}$$

$$V_i = \sqrt{5^2 - 2(-9.8)(4)}$$

$$V_i = 10.2m/s$$

② Find t :

$$V_f = V_i + gt$$

$$t = \frac{V_f - V_i}{g}$$

$$t = \frac{5 - 10.2}{-9.8}$$

$$t = 0.53s$$

Lab Exam Information

- 1.) Abstract
 - Get the readers attention
 - Explains what the lab is about
- 2.) Introduction
 - Purpose
 - What is the lab about
 - Background information
 - Important formulae → describe your variables
 - Diagram → Define any variables
- 3.) Hypothesis
 - An educated guess of what you expect to happen
 - Guess based on what you know in theory
- 4.) Materials
 - Point form list of materials
 - Checklist → Select what you actually use
 - Room to add on other materials
- 5.) Procedure
 - Step by step explanation of what you did in the experiment
 - Try to avoid writing in 1st person "I did this...." ✗
 - Safety precautions
- 6.) Calculations
 - Sample calculation for each type of calculation
 - Extra calculations should be listed in a table.
 - Include units

- 7.) Results & Discussion _{Be}
 - MOST Important Part → Clear & concise
 - Results → should be Tabulated } Use a Ruler!
 - Graphs → included in this section }

Tables

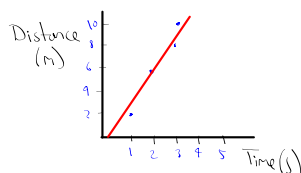
Title: Distance travelled by car

Exp #	d (m)	d (km)	t (hr)	v (km/hr)
1	4	0.004	0.5	0.008 ← Just number
2	50	0.05	1.0	0.05

Variable + units at top only

Graphs

Title: Determination of velocity of a rocket



- Discussion → Answer any follow up questions
 → Extra calculation?

Sources of Error:

- Degree of measurement errors: Ex. Ruler → 0.5mm error
- Human error
- Equipment error
- Calculation Errors not accepted: ✗

8.) Conclusion

- Brief statement of your results
- Ch... 1, 2, 3, ...