Proposed Problem

2D motion

CRP #24

- Create Useful description - sketch, graphs, define quantities, define problem
- Physics Approach - list physics concepts that would apply to this problem
- Specific Application of Physics - use the concepts to model mathematically model the problem
- Mathematical Procedures - use the equations to solve the problem

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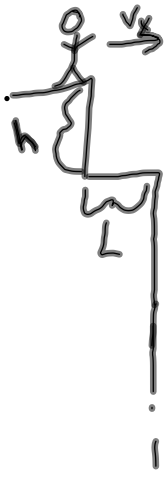
Physics Problem Solving Sheet

Useful Description

Picture & Given Information:



Const. acc Y	Const vel. X
$\Delta y = h$	$\Delta x = L$
$v_{iy} = 0$	$v_x = ?$
$v_{fy} =$	
$a = -9.8$	
$\Delta t =$	

Question: What is his minimum horiz speed

Target Quantiy: v_x

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Physics Problem Solving Sheet (cont.)

Physics Approach

Physics Concepts and/or Principles:

see last slide

Specific Application of Physics

Assumptions/ Constraints:

no air res.

Specific Equations:

$v_x = \frac{\Delta x}{\sqrt{\frac{2\Delta y}{-9.8\,m/s^2}}} = \frac{\Delta x}{\Delta t}$

Mathematical Procedures

Employ specific equations to solve for target quantity.

$v_x = \frac{L}{\sqrt{\frac{2(h)}{-9.8\,m/s^2}}}$

$\Delta y = \frac{1}{2} a t^2 + v_{iy} t$

$t = \sqrt{\frac{2\Delta y}{-9.8\,m/s^2}}$

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