Proposed Problem

1D motion
CRP #1

- 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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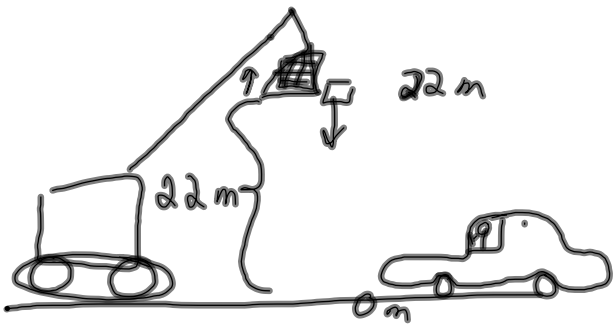
Physics Problem Solving Sheet

Useful Description

Picture & Given Information:



$\Delta y = -22\,m$
$V_i = X$
$\Delta t = 2.5\,s$
$a = -9.8\,\frac{m}{s^2}$
$V_f = ?$

$\Delta y = y_f - y_i$
$0 - 22 = -22$

Question: How fast do it hit the ground?

Target Quantiy: V_f

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Physics Problem Solving Sheet (cont.)

Physics Approach

Physics Concepts and/or Principles:

const. acc.

Specific Application of Physics

Assumptions/ Constraints:

ignore air res.

Specific Equations:

$\Delta y = v_f t - \frac{1}{2} a t^2$

Mathematical Procedures

Employ specific equations to solve for target quantity.

$\Delta y = v_f t - \frac{1}{2} a t^2$

$-22\,m = v_f(2.5\,s) - \frac{1}{2}\left(-9.8\frac{m}{s^2}\right)(2.5\,s)^2$

$-22\,m = (2.5\,s)v_f + 30.6\,m$

$-52.6\,m = (2.5\,s)v_f$

$-21\frac{m}{s} = v_f$

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