

Proposed Problem

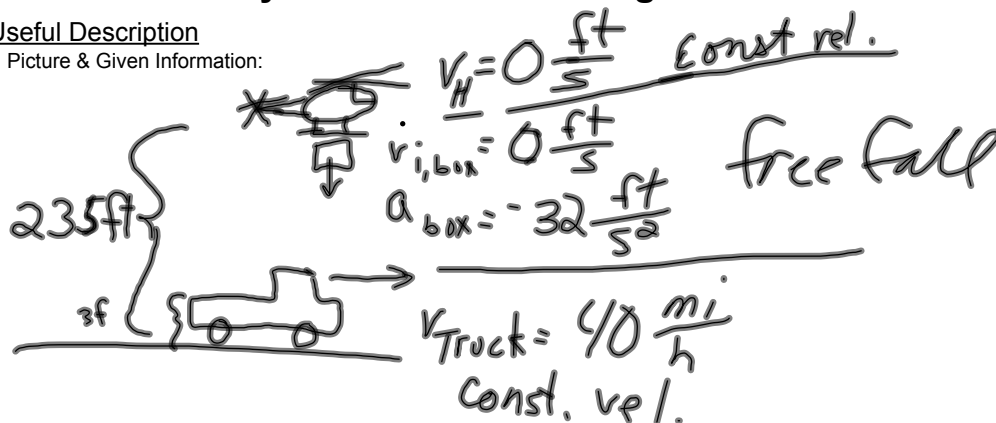
1D motion
CRP #15

- 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

Aug 5-9:52 AM

Physics Problem Solving SheetUseful Description

Picture & Given Information:



Question:

When should the package be dropped?

Target Quantity:

 Δt

Jul 26-9:35 PM

Physics Problem Solving Sheet (cont.)

Physics Approach

Physics Concepts and/or Principles:

box - free fall
truck = const. vel.

Specific Application of Physics

Assumptions/ Constraints:

ignore air res.

Specific Equations:

const. vel. $v = \frac{\Delta x}{\Delta t}$

free fall: $\Delta y = v_i t + \frac{1}{2} a t^2$

Mathematical Procedures

Employ specific equations to solve for target quantity.

$$x_f = v \Delta t + x_i$$

$$= 58.6 \frac{\text{ft}}{\text{s}} (t) + 0$$

($y = mx + b$) $x_f - y_i$

$$y_f = \frac{1}{2} a t^2 + v_i t + y_i$$

$$0 = \frac{1}{2} (-32 \frac{\text{ft}}{\text{s}^2}) (t^2) + 232 \text{ ft}$$

$$\Delta t \approx 3.8 \text{ s}$$

Jul 26-9:49 PM