Tuesday, February 26/13
Physics 112/111

Progress Reports - Feb. 28

Level 1 - Perpendicular Components - Worksheet

1. ICA: Velocity-Time Graph - Day Late Today
2. Check: Worksheet - Motion Problems - Do Problems in Bold
3. Level 1 - Demo Prep
4. Objects Moving Vertically
5. Worksheets

[Mock of Quiz Friday. which 1/13.]

#19.

$\vec{v}_i = 22\ m/s$

$\vec{a} = 14\ m/s^2$

$t = ?$

$\vec{d} = +26m$

$\vec{d} = \vec{v}_i t + \frac{1}{2}\vec{a}t^2$

$26 = (22)t + \frac{1}{2}(14)t^2$

$26 = 22t + 7t^2$

$7t^2 + 22t - 26 = 0$

$a \quad b \quad c$

$t = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

$t = \frac{-(22) \pm \sqrt{(22)^2 - 4(7)(-26)}}{2(7)}$

$t = \frac{-22 \pm \sqrt{1212}}{14}$

$t = \frac{-22 \pm 34.8}{14}$

$t = \frac{-22 + 34.8}{14}$ $\quad t = \frac{-22 - 34.8}{14}$

$t = 0.91\ s$

2sf

OR

$\vec{v}_f^{\,2} = \vec{v}_i^{\,2} + 2\vec{a}\vec{d}$

$\vec{v}_f^{\,2} = (22)^2 + 2(14)(26)$

$\vec{v}_f^{\,2} = 1212$

$\vec{v}_f = 34.8\ m/s$ intermediate answer.

3sf

$\vec{v}_f = \vec{v}_i + \vec{a}t$

$t = \frac{\vec{v}_f - \vec{v}_i}{\vec{a}}$

$t = \frac{34.8 - 22}{14}$

$t = 0.91\ s$ ✓