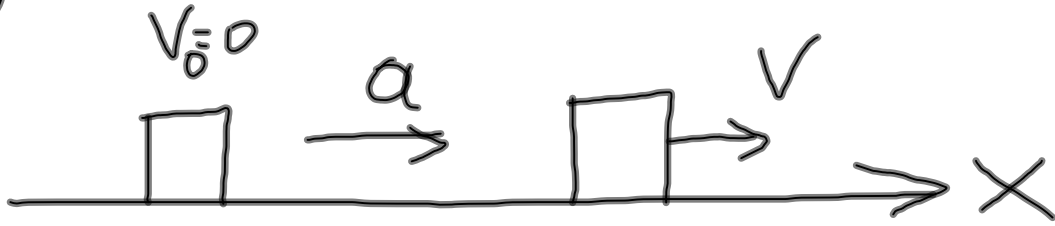


HANDOUT 10/2/14

①



$$\left[ \begin{array}{l} V_0 = 0 \\ v = 120 \frac{\text{km}}{\text{hr}} = 33.3 \frac{\text{m}}{\text{s}} \\ a = ? \\ t = ? \\ \Delta x = 240 \text{ m} \end{array} \right.$$

Oct 2-9:41 AM

$$\begin{aligned} a) \quad \Delta x &= \frac{v^2 - v_0^2}{2a} \\ 240 &= \frac{(33.3)^2 - 0^2}{2a} \\ a &= 2.31 \frac{\text{m}}{\text{s}^2} \end{aligned}$$

$$\begin{aligned} b) \quad v &= v_0 + at \\ 33.3 &= 0 + 2.31t \Rightarrow t = 14.4 \text{ s} \end{aligned}$$

Oct 2-9:43 AM

②



$$\begin{aligned} v_0 &= 100 \frac{\text{m}}{\text{s}} \\ v &= 0 \\ a &= -0.5 \frac{\text{m}}{\text{s}^2} \\ t &= ? \\ \Delta x &= ? \end{aligned}$$

$$\Delta x = \frac{v^2 - v_0^2}{2a}$$

$$\Delta x = 10,000 \text{ m}$$

$\Delta x > 800 \text{ m}$ , SO RUNWAY IS TOO SHORT.

Oct 2-9:46 AM