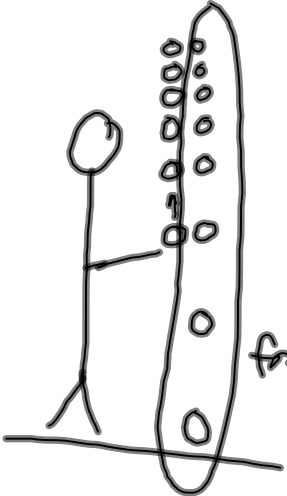


tossing object up.



UP

$$v_i = +$$

$$a = -9.8 \frac{m}{s^2}$$

(top)  $v_f = 0 \frac{m}{s}$

freefall

down

$$v_i = 0 \frac{m}{s}$$

$$a = -9.8 \frac{m}{s^2}$$

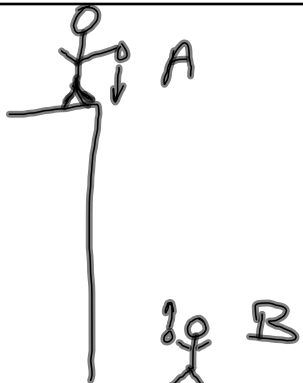
velocity when reaches starting pt. =  $-v_{i,up}$

Straight up & down. (1D)

Oct 26-7:17 AM

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| A (freefall)              | B (const. acc)             |
|---------------------------|----------------------------|
| $v_{i,A} = 0 \frac{m}{s}$ | $v_{i,B} = 25 \frac{m}{s}$ |
| $a = -9.8 \frac{m}{s^2}$  | $a = -9.8 \frac{m}{s^2}$   |
| $x_{i,A} = 15 m$          | $x_{i,B} = 0 m$            |



$\Delta t = ?$

How long until they meet?

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

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

$$x_{f,A} - x_{i,A} = 0 \frac{m}{s} (\Delta t) + \frac{1}{2} (-9.8 \frac{m}{s^2}) \Delta t^2 + 15 m$$

$$x_{f,B} = (25 \frac{m}{s}) \Delta t + \frac{1}{2} (-9.8) \Delta t^2 + 0 m$$

Oct 26-8:08 AM