



①  $y \uparrow$

$20m$

$V_0 = 0$

$v$

a)  $t = ?$   
 b)  $v = ?$

$V_0 = 0$   
 $v = ?$   
 $g = -9.8 \frac{m}{s^2}$   
 $t = ?$   
 $\Delta y = -20m$

$\Delta y = y_f - y_0$   
 $\Delta y = 0 - 20$   
 $\Delta y = -20m$

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$$a) \quad \Delta y = \cancel{V_0}t + \frac{1}{2}gt^2$$

$$-20 = \frac{1}{2}(-9.8)t^2$$

$$| t = 2.02 \text{ s} |$$

b)

$$V = V_0 + gt$$

$$V = 0 - 9.8(2.02)$$

$$| V = -19.8 \frac{\text{m}}{\text{s}} |$$

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$$b) \quad \Delta y = \frac{V^2 - V_0^2}{2g}$$

$$-20 = \frac{V^2 - 0^2}{2(-9.8)}$$

$$V^2 = 392$$

It is your choice based on the sketchy-sketch.

There are 2 solutions...  $V = \pm 19.8 \frac{\text{m}}{\text{s}} \Rightarrow V = -19.8 \frac{\text{m}}{\text{s}}$

HW: HANDOUT # 21-24 + 27

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