

50 $f_0 \dots f_0$

$\Delta t = 3s$ (for trip) so

$$\Delta t_{up} = 1.5s$$

$$\text{On trip up: } a = \frac{\Delta v}{\Delta t} = \frac{v_f - v_i}{\Delta t}$$

$$a = -\frac{v_i}{\Delta t} \Rightarrow v_i = -(a \Delta t) = -(9.8 \text{ m/s}^2)(1.5s)$$

$$\boxed{v_i = 14.7 \text{ m/s}}$$

51

$$\Delta t_{up} = 1.5s$$

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

$$* v_f = 0$$

$$v_i = 14.7 \text{ m/s}$$

* (b/c we're looking @ trip up)

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

$$= (14.7 \text{ m/s})(1.5s) + \frac{1}{2}(-9.8 \text{ m/s}^2)(1.5s)^2$$

$$= 22.1 \text{ m} + -11 \text{ m}$$

$$\boxed{= 11.1 \text{ m}}$$