

a) $V_0 = 25.0 \text{ m/s}$
 $a = -9.8 \text{ m/s}^2$
 $V_f = 0 \text{ m/s}$
 $x_0 = 0 \text{ m}$

$$V_f^2 = V_0^2 + 2a(x - x_0)$$

$$(0 \text{ m/s})^2 = (25.0 \text{ m/s})^2 + 2(-9.8 \text{ m/s}^2)x$$

$$x = 31.9 \text{ m}$$

b) $V_f = V_0 + a \cdot t$

so $0 \text{ m/s} = (25 \text{ m/s}) + (-9.8 \text{ m/s}^2) \cdot t$

$$t = 2.55 \text{ sec}$$

c) By symmetry, $t = 2.55 \text{ sec}$

d) By symmetry,

$$V_f = -25.0 \text{ m/s}$$