$$y = y_0 + v_{0y} t + \tfrac{1}{2} a_y t^2 \rightarrow t = \frac{-v_{0y} \pm [v_{0y}^2 - 4 (\tfrac{1}{2} a_y) (y_0 - y)]^{1/2}}{2 (\tfrac{1}{2} a_y)} = \frac{-15.0 \text{ m/s} \pm [(15.0 \text{ m/s})^2 - 4 (\tfrac{1}{2}) (-9.80 \text{ m/s}^2) (5.00 \text{ m} - 0.00 \text{ m})]^{1/2}}{2 (\tfrac{1}{2}) (-9.80 \text{ m/s}^2)} \rightarrow t = 3.36 \text{ s}$$