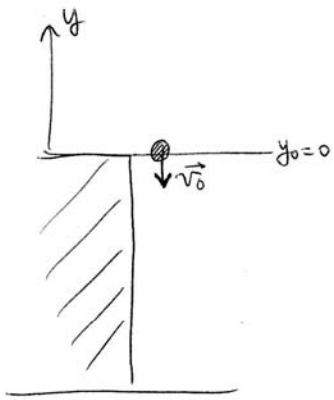
Physics 101Rec
Quiz#1-Sect#06
Chapter 2

Name: Key Id:

A ball is thrown vertically downward from a tall building with an initial speed of 4.0 m/s.

a. How far is the ball from the top of the building when its speed is 20 m/s?

b. At what time does the ball reach that position?



a) $v^2 - v_0^2 = -2g(y - y_0)$

$(20)^2 - (4)^2 = -19.6(y - \cancel{y_0}^{\,0})$

$\Rightarrow \boxed{y = -19.6\text{ m}}$ "It is 19.6 m below the top of the building."

b) $v = v_0 - gt$

$-20 = -4 - 9.8t$

$\Rightarrow t = -\frac{16}{-9.8} = \boxed{1.63\text{ s}}$