

3. A ball thrown in the air at time $t = 0$ has a height given by

$$h(t) = h_0 + v_0t - \frac{1}{2}g_0t^2$$

meters where t is measured in seconds, h_0 is the height at time 0, v_0 is the velocity (in meters per second) at time 0 and g_0 is the constant acceleration due to gravity (in m/s^2). Assuming $v_0 > 0$, find the time that the ball attains its maximum height. Then find the maximum height.