

A golfer hits a ball off the grass and after 5 seconds it hits the ground again. Using the equation $h(t) = h_0 + v_0t - 16t^2$ to model the path of the ball where time is in seconds and height is in feet.

Find the initial upward velocity of the golf ball.

Write the equation modeling the path of the ball.

Rewrite the equation in factored form and verify the times the ball hits the ground.

At what times does the ball reach the maximum height? What is the maximum height?