Answer on Question #82202 – Math – Calculus

$h(t)= -16t^2 + Vot + ho,$

$ho=2;$

$Vo=130.$

Substitute these values into the function

$h(t)= -16t^2 + 130t + 2.$

Take the first derivative

$h'(t) = -16*2t + 130 = -32t +130.$

Equate the derivative with zero
$h'(t) = 0$. Solve the equation
$-32t +130 = 0.$

$-32t = -130$
$t= -130/(-32) =4.0625$ (s).

Find the maximum height at the moment
$t = 4.0625$s.
$h(4.0625) = -16 (4.0625)^2 + 130 *4.0625 +2 = - 264.0625 + 528.125+2= 266.0625$ ft.

Answer: 266.0625 ft.