

Problem 7.

$$s(t) = -4.9t^2 + V_0t + S_0$$

$$\frac{ds(t)}{dt} = -9.8t + V_0$$

$$0 = -9.8t + 96$$

$$9.8t = 96$$

$$t = 9.765 \text{ seconds}$$

$$\begin{aligned} \text{Maximum height} &= -4.9(9.765)^2 + 96(9.765) \\ &= 470.20 \text{ ft} \end{aligned}$$