

Problem statement After a softball game, the winning pitcher throws the ball straight up in the air. The height s of the ball in feet is given by the formula $s = 5 + 48t - 16t^2$, where t is the time after release (measured in seconds).

- a) The formula is valid only until the ball hits the ground. When does that happen?
- b) Find the instantaneous velocity of the ball at the following instants: $t = 1$, $t = 2$ and $t = 3$.
- c) When do you think that the ball reaches its highest point? Check your guess by computing the instantaneous velocity at that instant. How high does the ball get?