Exercise 17

For the following exercises, the position function of a ball dropped from the top of a 200-meter tall building is given by $s(t) = 200 - 4.9t^2$, where position s is measured in meters and time t is measured in seconds. Round your answer to eight significant digits.

Use the preceding exercise to guess the instantaneous velocity of the ball at $t = 5$ sec.

Solution

The instantaneous velocity of the ball at $t = 5$ sec is

$$v(5) = -4.9(2)(5) = -49 \text{ meters/second.}$$