Exercise 21

For the following exercises, consider a rocket shot into the air that then returns to Earth. The height of the rocket in meters is given by $h(t) = 600 + 78.4t - 4.9t^2$, where t is measured in seconds.

Use the preceding exercise to guess the instantaneous velocity of the rocket at $t = 9$ sec.

Solution

The instantaneous velocity of the rocket at $t = 9$ sec is

$$v(9) = 78.4 - 4.9(2)(9) = -9.8 \text{ meters/second.}$$