

gottaMath 151 – Extra Homework on Finding the Velocity Function and Rate of Change

These are not hand-in problems – Webassign is just a bit light on problems like this, so I decided to write up a few extras. I'll hand out solutions tomorrow.

In 1-4, a function describing the position of an object at time t is given. The directions are to find a function that describes the instantaneous velocity at any time t .

1. $s(t) = -2t^2 + 7t$

2. $s(t) = \frac{7}{t}$

3. $s(t) = \frac{2t-8}{t}$

4. $s(t) = \sqrt{t+3}$

5. A water tank is being drained, and the number of gallons of water left in it t minutes after draining begins is given by

$$V(t) = 100,000 \left(1 - \frac{t}{60} \right)^2$$

Find a function that describes the rate at which water is being drained from the tank, and use it to find the rate after 10, 30, and 50 minutes.