

The distance S in feet traveled by a body at time t seconds is given by the function below, shown to the right.

1) $S = 1 + t^2$

A) Find the average velocity over the time interval $1 \leq t \leq 3$

B) Use the average velocity $V = \frac{S(t+h) - S(t)}{h}$
velocity at $t = 3$

to estimate the instantaneous

use $h = .1$ $h = .01$ $h = .001$

2) Suppose \$5000 is invested in an account at 6% annual interest compounded continuously. Determine how long it will take for the balance to double.