

Math 34A — Week 5

12. The volume of water in my bathtub when I pul out the plug is given by $f(t) = 4 - t^2$ (t in minutes).

- (a) Find the average rate the water leaves my tub between $t = 1$ and $t = 2$.
- (b) Find the average rate the water leaves my tub between $t = 1$ and $t = 1.1$.
- (c) Find the average rate the water leaves my tub between $t = 1$ and $t = 1 + h$. Simplify as much as possible.
- (d) What is the exact rate at which water leaves my tub at $t = 1$ is?

