

## Last Time

- We talked about pos vs. time (see handout)
- In each bin there is a local slope:

$$v = \frac{\Delta x}{\Delta t} \Rightarrow \frac{dx}{dt}$$

- Now

$$\Delta x_1 = v_1 \Delta t$$

↖ area of the first bin of  
v vs. t

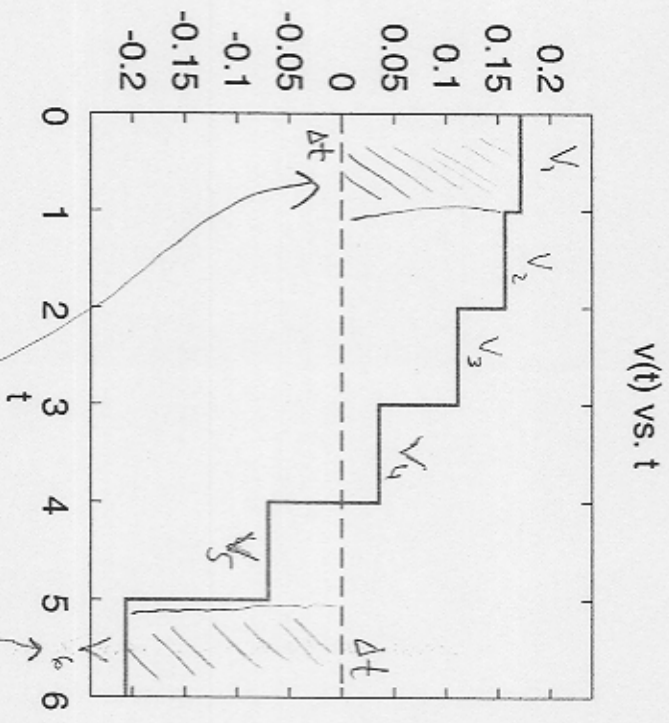
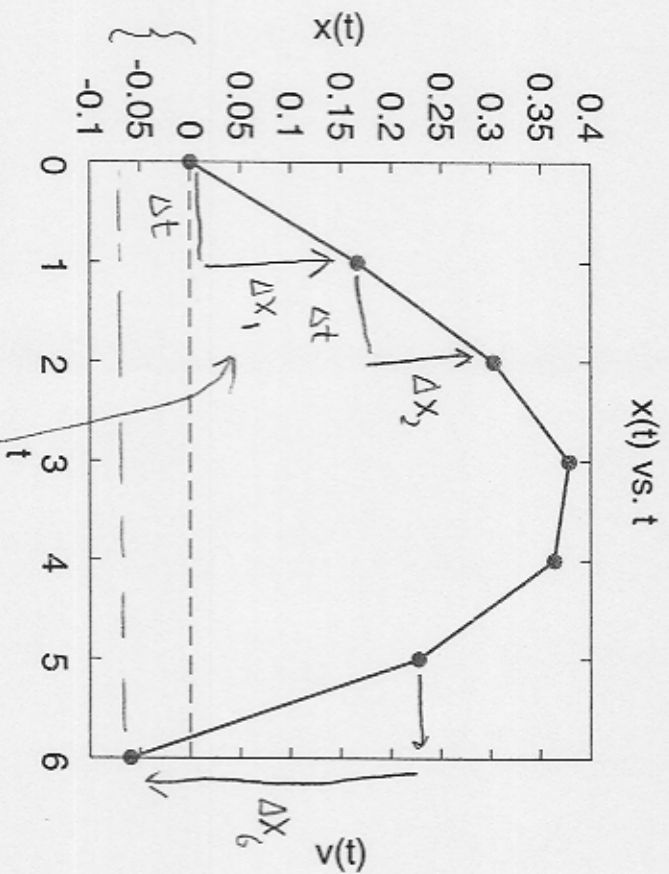
$$\Delta x_2 = v_2 \Delta t$$

⋮

$$\Delta x_6 = v_6 \Delta t$$

$$\Delta x_{\text{Total}} = x_f - x_i = \sum_i \Delta x_i = \sum_i v_i \Delta t$$

Position vs. Time



$\Delta x_1 = v_1 \Delta t = \text{area of } v \text{ vs. } t$   
 $\Delta x_6 = v_6 \Delta t = \text{signed area of } v \text{ vs. } t$