

Position-Time Graphs and Velocity

Find the slope on the d-t graph using two points.

$$(1.00 \text{ s}, 1.265 \text{ m})$$

$$(4.00 \text{ s}, 2.255 \text{ m})$$

x y

$$\text{slope} = \frac{\Delta y}{\Delta x}$$

$$\text{slope} = \frac{y_2 - y_1}{x_2 - x_1}$$

$$\text{slope} = \frac{(2.255 \text{ m} - 1.265 \text{ m})}{(4.00 \text{ s} - 1.00 \text{ s})}$$

← displacement
↑ time interval

$$\text{slope} = \frac{0.990 \text{ m}}{3.00 \text{ s}}$$

$$\text{slope} = 0.330 \text{ m/s} \quad \text{velocity}$$

Choose 10 random velocity values and find the mean:
(between 1.00 and 3.00s)

$$V_{\text{mean}} = 0.335 \text{ m/s}$$

↑

This value is very close to the slope that we calculated for the same interval.

$$\text{Slope}_{\text{d-t}} = \text{velocity}$$

