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Source: |KBe2020math401flo2|

- · Galileo's Inclined Plane
 - · rolling a ball down the ramp
 - · picture shows where the ball after each moment.
 - · snapshots taken at constant rate
 - · We can figure out the instantaneous speed
 - Equ is $y = 32x^2$
 - Derivative is $y = 32(x+d)^2 32x^2$
- "Instantaneous speed as a function"

$$y = \frac{a(x+h)^2 - ax^2}{h}$$

$$= \frac{a(x^2 + h^2 + 2xh) - ax^2}{h}$$

$$= \frac{ax^2 + ah^2 + 2axh - ax^2}{h}$$

$$= \frac{ax^2 + axh^2 + 2ah - ax^2}{h}$$

$$= \frac{ah^{1/2} + 2ax/h}{h}$$

$$= ah^{1/2} + 2ax$$

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