

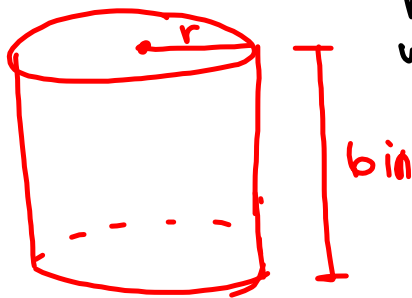
Schedule

- 1) Derivatives Quiz (from Differentiation Review)
- 2) Unit 4 Test Corrections in groups
- 3) Homework Questions/Unit 5 Review Time

Take home test will be given before you leave today

5.6 HW

15)



$r = 1.9$
when
 $h = 6$

$$V = \pi r^2 h$$

$$\frac{dr}{dt} = \frac{0.001 \text{ in}}{3 \text{ min}}$$

$$\frac{dr}{dt} = \frac{1}{3000} \frac{\text{in}}{\text{min}}$$

Find $\frac{dV}{dt}$

$$V = \pi r^2 h$$

$$V = \pi r^2 (6)$$

$$V = 6\pi r^2$$

$$\frac{dV}{dt} = 12\pi r \frac{dr}{dt}$$

$$\frac{dV}{dt} = 12\pi(1.9)\left(\frac{1}{3000}\right)$$

$$\frac{dV}{dt} = \frac{19\pi}{2500} = 0.0076\pi$$

$$\frac{dV}{dt} \approx 0.0239 \text{ in}^3/\text{min}$$