

Related Rates Day 2 HW Answers:

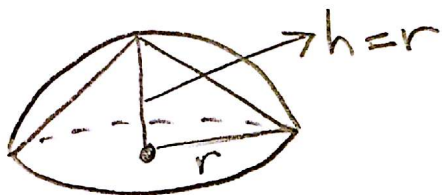
73 AB3/BC1:

$$a) \frac{dy}{dx} = \frac{-y-1}{x+4y}$$

$$b) y-1 = -\frac{1}{3}(x-2)$$

$$c) (6, -3)$$

70 AB4:



$$S = \frac{1}{2}(4\pi r^2) + \pi r^2 = 3\pi r^2$$

$$\frac{dS}{dt} = 18 = 6\pi r \frac{dr}{dt}$$

$$\frac{dr}{dt} = \frac{3}{\pi r} \quad r=h$$

$$V_{\text{cone}} = \frac{1}{3}\pi r^2 h = \frac{1}{3}\pi r^3$$

$$\frac{dV}{dt} = \pi r^2 \frac{dr}{dt}$$

$$= \pi(4)^2 \cdot \left(\frac{3}{\pi \cdot 4}\right)$$

$$\frac{dV}{dt} = 12 \text{ in}^3/\text{s}$$

MC:

1) E

2) C

3) D

4) A

5) C