

Chapter 4 Review Answers.notebook

1) local max at  $x = -\sqrt{3}$   
 " min at  $x = \sqrt{3}$   
 overall max at  $x = 4$   
 min at  $x = -4$

2) absolute min at  $x = 0$

4)  $4 \times 4 \times 2 = 32 \text{ m}^3$

5)  $r = 2 \quad h = 5$

6)  $400\pi \text{ cm}^3$

7)  $0.177 \text{ cm/min}$

8)  $-\frac{25}{768\pi} \text{ m}^3/\text{min}$

9)  $-\frac{8}{3} \text{ ft/s}$

3)  $f(x) = x^6 - 10x^4$

$\frac{\text{ints}}{V-\text{int}}$   
 $\frac{0}{0}$

$\frac{X-\text{int}}$

$x^4(x^2 - 10) = 0$

$x = 0 \quad x = \pm\sqrt{10}$

$f'(x) = 6x^5 - 40x^3$

$0 = 2x^3(3x^2 - 20)$

$x = 0 \quad x = \pm\sqrt{\frac{20}{3}}$

5)  $SA = 2\pi r^2 + 2\pi r h$

$C = 10(2\pi r^2) + 8(2\pi r h)$

$V = \pi r^2 h$   
 $20\pi = \pi r^2 h$

$\frac{20}{r^2} = h$