

Answers to Problems from section 4.5:

6. $\frac{a}{b}$.

8. 2.

10. 3.

14. 0.

24. 0. (L'Hospital's Rule doesn't apply)

29. 0.

30. 1.

34. $\frac{1}{2}$.

35. 1.

37. e^{-2} .

Answers to Problems from section 4.6:

9. The largest possible volume is 4000 cm^3 .

13. $(-\frac{1}{3}, \pm\frac{4}{3}\sqrt{2})$.

20. $\frac{4}{27}\pi r^2 h$.

Answers to Problems from section 4.7:

5. (a) $C(1000) \approx \$342,491$, $c(1000) \approx \$342.49/\text{unit}$. $C'(1000) \approx \$389.74/\text{unit}$.
(b) 1522 units. This gives a minimum value. (c) The minimum average cost is about $\$121.62/\text{unit}$.

9. $\frac{1000}{3}$.

17. (a) $p(x) = -\frac{1}{10}x + 550$. (b) 175. (c) 100.