Answers to Even-Numbered Exercises

Exercises 1.1

2. (a) 2
(b) 1
(c) $f(2) = 3/2$

4. $x = 1$ and $x = 3$

10. (a) graph
(b) $\lim_{t \to 8-} r(t) = 0.05$, $\lim_{t \to 8+} r(t) = 0.10$
(c) all t except $t = 8$ and $t = 16$

12. 3

16. limit does not exist

20. 2

30. -6

32. $\frac{1}{6}$

40. 0

46. 1

Exercises 1.2

2. (a) 0 (b) $+\infty$ (c) $-\infty$ (d) 0
(e) $f(0) = -1$, $f(1) = 0$

8. $+\infty$

14. $+\infty$

20. 1/4

32. 200

44. No vertical asymptote. Horizontal asymptote $y = 1$.
Always positve except at $x = 0$. Graph approaches $y = 1$ from below.

Exercises 1.3

4. $-1, 4, 8$

6. 1,6

8. 1

10. graph

22. (a) $f(1) = 1$, $f(2) = 4$, $f(3) = 6$, $f(4) = 2$, $f(5) = \sqrt{5}$,
(b) discontinuous at $x = 4$

28. continuous everywhere

30. $c = 12$

38. $-1/4$

42. f takes the value 2 twice and 3 once.

46. No. No; because the function is not continuous.

48. 4, they lies in: (0.5,1) (1,1.5) (2.5,3) and (3.5,4)

50. (a) and (d)