

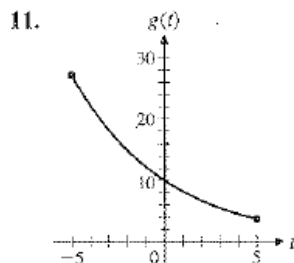
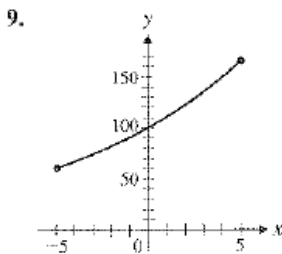
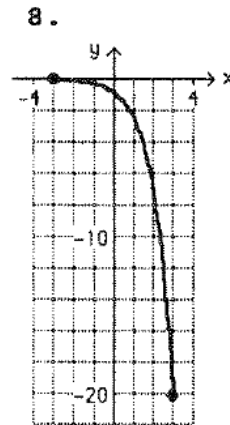
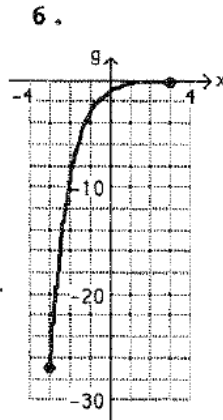
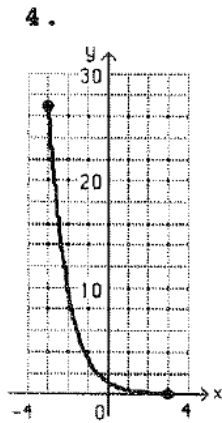
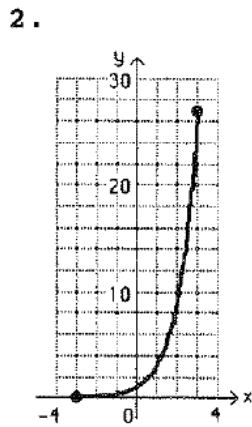
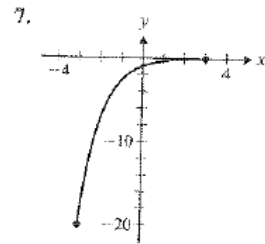
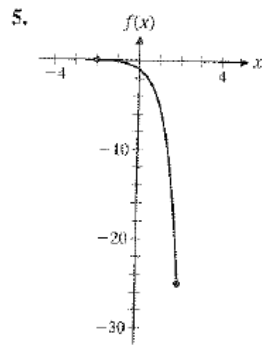
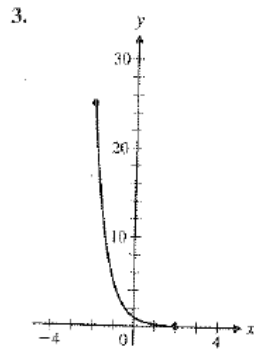
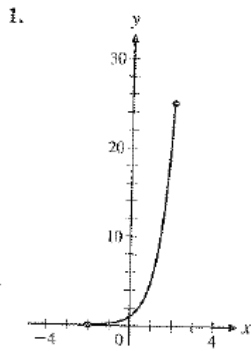
College Math – Chapter 2 Answers

■ CHAPTER 2

Exercise 2-1

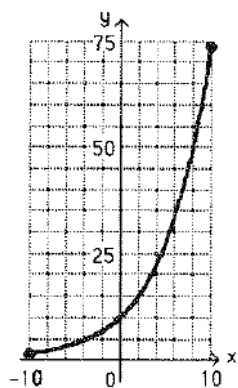
1. (A) 2 (B) 1 (C) 2 (D) 0 (E) 1 (F) 1 3. (A) 5 (B) 4 (C) 5 (D) 1 (E) 1 (F) 1.
 5. (A) 6 (B) 5 (C) 6 (D) 0 (E) 1 (F) 1 7. (A) 3 (B) 4 (C) Negative 9. (A) 4 (B) 5 (C) Negative
 11. (A) 0 (B) 1 (C) Negative 13. (A) 5 (B) 6 (C) Positive
 15. (A) x intercept: -2; y intercept: -1 (B) Domain: all real numbers except 2 (C) Vertical asymptote: x = 2
2. (A) 1 (B) 0 (C) 1 (D) 1 (E) 1 (F) 1
 4. (A) 4 (B) 3 (C) 4 (D) 0 (E) 1 (F) 1
 6. (A) 3 (B) 2 (C) 3 (D) 1 (E) 1 (F) 1
 8. (A) 1 (B) 2 (C) negative
 10. (A) 2 (B) 3 (C) negative
 12. (A) 3 (C) 4 (C) positive
 14. (A) 4 (C) 5 (C) positive

Exercise 2-2

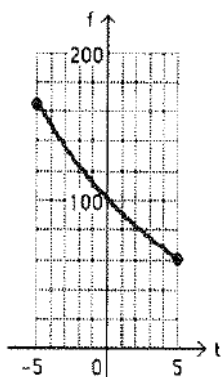


13. 4^{6xy} 15. e 17. $8e^{3.6i}$

10.



12.

14. 10^{2x+3} 16. e^{2x-1} 18. $9e^{-2.8x}$

Exercise 2-3

1. $27 = 3^3$ 3. $10^0 = 1$ 5. $8 = 4^{3/2}$ 7. $\log_7 49 = 2$ 9. $\log_8 8 = \frac{3}{2}$ 11. $\log_b A = u$ 13. 0 15. 1 17. 1 19. 3
 21. -3 23. 3 25. $\log_b P - \log_b Q$ 27. $5 \log_b L$ 29. $\log_b p - \log_b q - \log_b r - \log_b s$ 31. $x = 9$ 33. $y = 2$ 35. $b = 10$
 37. $x = 2$ 39. $y = -2$ 41. $b = 100$ 43. $5 \log_b x - 3 \log_b y$ 45. $\frac{1}{2} \log_b N$ 47. $2 \log_b x + \frac{1}{2} \log_b y$ 49. $\log_b 50 - 0.2t \log_b 2$
 51. $\log_b P + t \log_b(1 + r)$ 53. $\log_b 100 - 0.01t$ 55. $x = 2$ 57. $x = 8$ 59. $x = 7$ 61. No solution
 63. y 65. The graph of $y = \log_b(x - 2)$ is the graph of $y = \log_b x$ shifted 2 units to the right.

2. $32 = 2^5$ 4. $e^0 = 1$ 6. $27 = 9^{3/2}$ 8. $\log_6 36 = 2$

10. $\log_2 7^9 = \frac{2}{3}$ 12. $\log_b M = x$ 14. 0 16. 1 18. 1

20. -5 22. 5 24. 2 26. $\log_b F + \log_b G$ 28. $15 \log_b W$

30. $\log_b P + \log_b Q + \log_b R$ 32. $x = 4$ 34. $y = 3$ 36. $b = e$

38. $x = 5$ 40. $y = -\frac{1}{2}$ 42. $b = 8$ 44. $2 \log_b x + 3 \log_b y$

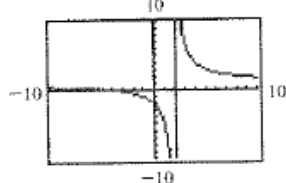
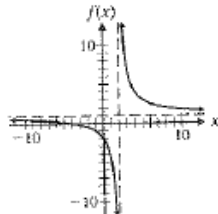
46. $\frac{1}{5} \log_b Q$ 48. $\frac{1}{3}(2 \log_b x - \log_b y)$ 50. $\log_b 100 + t \log_b 1.06$

52. $(\log_e A) - 0.3t$ 54. $\log_{10} 67 - 0.12x$ 56. $x = 12$ 58. 2

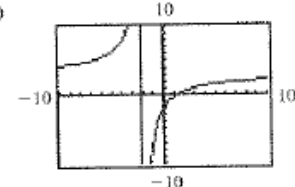
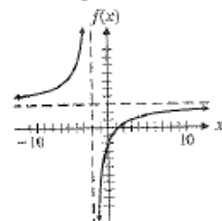
60. $x = 4$ 62. $x = 4$ 64. y

Chapter 2 Review Exercise

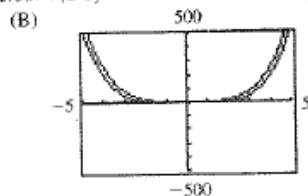
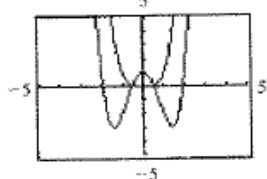
1. $v = \ln u$ (2-3) 2. $y = \log x$ (2-3) 3. $M = e^N$ (2-3) 4. $a = 10^r$ (2-3) 5. 5^{2x} (2-2) 6. e^{2d} (2-2) 7. $x = 9$ (2-3) 8. $x = 6$ (2-3)
 9. $x = 4$ (2-3) 10. $x = 2.157$ (2-3) 11. $x = 13.128$ (2-3) 12. $x = 1,273.503$ (2-3) 13. $x = 0.318$ (2-3)
 14. (A) 3 (B) 2 (C) 3 (D) 1 (E) 1 (F) 1 (2-1) 15. (A) 4 (B) 3 (C) 4 (D) 0 (E) 1 (F) 1 (2-1)
 16. (A) 2 (B) 3 (C) Positive (2-1) 17. (A) 3 (B) 4 (C) Negative (2-1)
 18. (A) x intercept: -4 ; y intercept: -2 (B) All real numbers, except $x = 2$ (C) Vertical asymptote: $x = 2$; Horizontal asymptote: $y = 1$
 (D) (E) (2-1)



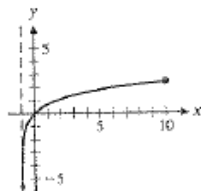
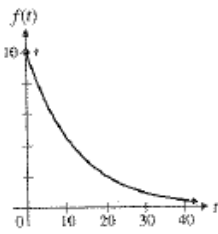
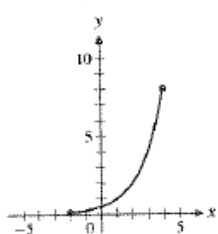
19. (A) x intercept: $\frac{1}{3}$; y intercept: -2 (B) All real numbers, except $x = -2$ (C) Vertical asymptote: $x = -2$; Horizontal asymptote: $y = 3$
 (D) (E) (2-1)



20. $x = 8$ (2-3) 21. $x = 3$ (2-3) 22. $x = 3$ (2-2) 23. $x = -1, 3$ (2-2) 24. $x = 0, \frac{1}{2}$ (2-2) 25. $x = -2$ (2-3) 26. $x = \frac{1}{2}$ (2-3)
 27. $x = 27$ (2-3) 28. $x = 13.3113$ (2-3) 29. $x = 158.7552$ (2-3) 30. $x = 0.0097$ (2-3) 31. $x = 1.4359$ (2-3) 32. $x = 1.4650$ (2-3)
 33. $x = 92.1034$ (2-3) 34. $x = 9.0065$ (2-3) 35. $x = 2.1081$ (2-3) 36. $x = 2.8074$ (2-3) 37. $x = -1.0387$ (2-3)
 38. They look very much alike (2-1) 39. (2-1) (A)



40. $1 + 2e^x - e^{-x}$ (2-2) 41. $2e^{-2x} - 2$ (2-2)
 42. Increasing: $[-2, 4]$ (2-2) 43. Decreasing: $[0, \infty)$ (2-2) 44. Increasing: $(-1, 10]$ (2-3)



45. $\log 10^\pi = \pi$ and $10^{\pi\sqrt{2}} = \sqrt{2}$; $\ln e^\pi = \pi$ and $e^{\ln\sqrt{2}} = \sqrt{2}$ (2-3) 46. $x = 2$ (2-3) 47. $x = 2$ (2-3) 48. $x = 1$ (2-3) 49. $x = 300$ (2-3)
 50. $y = ce^{-5t}$ (2-3) 51. If $\log_3 x = y$, then $1^y = x$; that is, $1 = x$ for all positive real numbers x , which is not possible. (2-3)
 52. \$10,263.65 (2-2) 53. \$10,272.17 (2-2) 54. 8 yr (2-2, 2-3) 55. 6.93 yr (2-2, 2-3)