

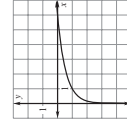
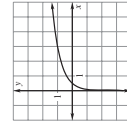
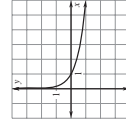
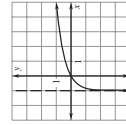
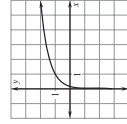
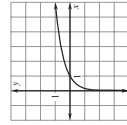
# Answer Key

## Chapter 8

### Lesson 8.4

#### Practice B

- $4^2 = 16$
- $3^4 = 81$
- $2^0 = 1$
- $9^{1/2} = 3$
- $5^{-1} = \frac{1}{5}$
- $2^{-3} = \frac{1}{8}$
- 0.549
- 1.061
- 0.405
- 0.3
- 0
- 1
- $\frac{1}{3}$
- $\frac{2}{3}$
- undefined
- $f^{-1}(x) = 3^x$
- $f^{-1}(x) = e^x$
- $f^{-1}(x) = \left(\frac{1}{3}\right)^x$
- $f^{-1}(x) = \frac{10^x}{2}$
- $f^{-1}(x) = 2^x + 1$
- $f^{-1}(x) = \frac{x}{2}$



28.  $\approx 129$  strides    29.  $\approx 267.4$  miles per hour

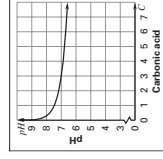
# Answer Key

## Chapter 8

### Lesson 8.5

#### Practice B

- $\log_3 - \log_4 \approx -0.125$
- $\log_3 + \log_4 \approx 1.079$
- $2 \log_3 \approx 0.954$
- $2 \log_4 \approx 1.204$
- $-\log_4 \approx -0.602$
- $\log_4 - 3 \log_3 \approx -0.829$
- $\log_6 3 + \log_6 x$
- $\log_5 x - \log_2 5$
- $\log_4 x + \log_4 y - \log_4 3$
- $\frac{1}{2} \log_3 x + \log_3 y + \log_3 z$
- $\log_5 2 + \frac{1}{2} \log_5 x$
- $2 \log x - \log 4$
- $1 - \frac{1}{2} \log x$
- $2 \log_2 x + \log_2 y - \log_2 z$
- $\log_3 \left(\frac{1}{2}\right)$
- $\log_5 3x^2$
- $\log_4 5xy$
- $\log \frac{\sqrt{x}}{4}$
- $\log_2 \frac{\sqrt[3]{x^2}}{y^3}$
- $\log_3 \left(\frac{4x^2}{5}\right)$
- $\frac{\log 12}{\log 3} = \frac{\ln 12}{\ln 3} \approx 2.262$
- $\frac{\log 2}{\log 6} = \frac{\ln 2}{\ln 6} \approx 0.387$
- $\frac{\log 0.5}{\log 4} = \frac{\ln 0.5}{\ln 4} = -0.5$
- $\frac{\log 12}{\log 0.8} = \frac{\ln 12}{\ln 0.8} \approx -11.136$
- $\frac{\log 2.8}{\log 1.5} = \frac{\ln 2.8}{\ln 1.5} \approx 2.539$
- $\frac{\log 6}{\log \frac{1}{2}} = \frac{\ln 6}{\ln \frac{1}{2}} \approx -2.585$
- pH = 6.1 + log B - log C    29.  $\approx 7.2$
- below normal
- pH = 7.48 - log C    32. 1.2



## Answer Key

### Chapter 8

#### Lesson 8.6

##### Practice B

1. 2.890 2. 2.544 3. 1.869 4. 1.609
5. 1.585 6. 0.646 7. 0.667 8. 0.805
9. 0.886 10. 0.462 11. 0.576
12. -2.322 13. -0.5 14. -0.973
15. -1.946 16. 1.609 17. 2 18. -1.792
19. 0.229 20. 0.308 21. 0 22. 0.347
23. -1.099 24. 25.850 25. 2.485
26. 1.445 27. 1.528 28. 148.413 29. 0.01
30. 2.828 31. 20.086 32. 100,000 33. 0.001
34. 2980.958 35. 20.086 36. 148.413
37. 10,000 38. 46.416 39. 3 40. 0.4
41. 0.002 42. 300,651,071 43. 21,333 44. 1
45. no solution 46. 1.5 47. no solution
48. 3 49. 11.185 years 50. 20.086

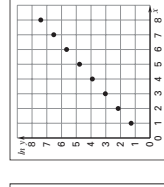
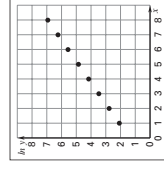
## Answer Key

### Chapter 8

#### Lesson 8.7

##### Practice B

1.  $y = (\frac{1}{2})^{2x}$  2.  $y = (\frac{1}{25})^{4x}$  3.  $y = 3(\frac{1}{4})^x$
4.  $y = 6(\frac{2}{3})^x$  5.  $y = (\frac{1}{2})^{5x}$  6.  $y = \frac{5}{4}(\frac{1}{4})^x$



9.  $y = 4(2)^x$

10.  $y = 4x^2$

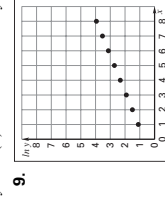
11.  $y = \frac{1}{4}x^3$

12.  $y = 2x^5$

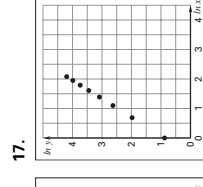
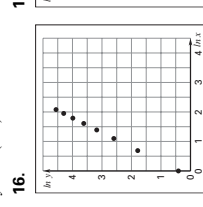
13.  $y = 1.2x^{1.5}$

14.  $y = 3x^{3.5}$

15.  $y = 4.3x^{1.2}$



16.  $y = 2(1.5)^x$



17.  $y = 1.5x^2$

18.  $y = 29.623x^{-0.809}$ ; 3,313 million

$y = 2.4x^{1.6}$