2-1 Exercises, pp. 62–63 (continued)

41. 126

42. 82

43. 3

44. 38

45. 216 cubic inches

46. $3^7 = 2{,}187¢$ or \$21.87

47. Yuma: 484,152; Phoenix: 9,272,112

48. $4 \cdot 3^3 = 108$ stars

49. 4, 16, and 64

50. 64 is $8 \cdot 8$, or 8^2

51. Possible answer: 2^5 is greater than 3^3 because $2^5 = 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 = 32$ and $3^3 = 3 \cdot 3 \cdot 3 = 27$.

52. 10 m

53. a

54. 56

55. 4.3

56. D

57. F

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2-1 Exercises, pp. 62–63

1. 32

2. 27

3. 36

4. 1

5. 5^2

6. 4^2

7. 3^3

8. 10^2

9. 100 times stronger

10. 121

11. 243

12. 512

13. 1

14. 64

15. 81

16. 32

17. 5

18. 8

19. 125

20. 30

21. 10,000

22. 9^2

23. 4^1

24. 4^3

25. 7^0

26. 2^5

27. 2^7

28. 40^2

29. 50^2

30. 10^5

31. $3^4 = 81$ points

32. 3^4 or 9^2

33. 2^4 or 4^2

34. 8^2, 4^3, or 2^6

35. 9^3 or 3^6

36. 36

37. 25

38. 145

39. 108

40. 37

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2-2 Exercises, pp. 66–67

1. 1,500

2. 18,000

3. 11

4. 120,000

5. 208,000

6. 1,130,000,000

7. 472,000

8. 362.2

9. 3.6×10^6

10. 2.14×10^5

11. 8.0×10^9

12. 4.2×10^4

13. 2,000,000,000,000,000,000,000

14. 2,100

15. 80,000

16. 2,500,000

17. 400,000

18. 1,100

19. 19,000

20. 20

21. 140

22. 268,000

23. 105

24. 41,600

25. 216.4

26. 5,500,000,000

27. 1,020

28. 211,500,000

29. 700,300

30. 4.28×10^5

31. 1.61×10^6

32. 3×10^9

33. 6.01×10^4

34. 5.2×10^1

35. 2.98×10^8

36. 8.9×10^6

37. 5×10^5

38. 367,000

39. 9.8×10^8 feet per second

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2-2 Exercises, pp. 66–67 (continued)

40. 4

41. 1.68

42. 340

43. 5

44. 540,000,000

45. 6.0; 7

46. 592,000

47. 2.44; 8

48. 1.3×10^9 years

49. 1.83×10^8 years

50. Triassic

51. The Earth, its formations, and its inhabitants date back so long that the measures of these time frames are extremely large numbers.

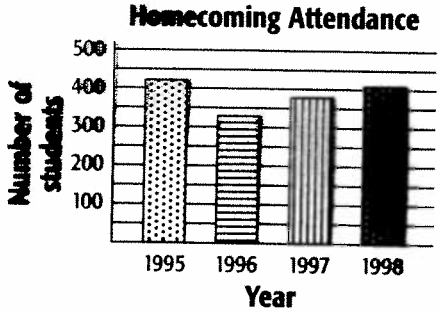
52. 1.1×10^4 years old

53.

Stems	Leaves
4	3 5 8
5	1 7
6	0 2 2

key: 4 | 5 means 45

54.



55. C

56. G

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2-3 Exercises, pp. 72–73

1. 47

2. 30

3. 23

4. 7

5. 4

6. 40

7. $280

8. 37

9. 42

10. 25

11. 15

12. 9

13. 73

14. 6

15. 588

16. 2

17. $139

18. $355

19. $>$

20. $<$

21. $>$

22. $=$

23. $=$

24. $<$

25. $4 \cdot (8 - 3) = 20$

26. $5 + (9 - 3) \div 2 = 8$

27. $(12 - 2)^2 \div 5 = 20$

28. $4 \cdot (2 + 6) = 32$

29. $(4 + 6 - 3) \div 7 = 1$

30. $9 \cdot (8 - 6) \div 3 = 6$

31. $82

32. **a.** $\frac{(27 + 24 + 28 + 33)}{4}$; 28°F

b. $(33 - 24) - (28 - 27)$

33. **a.** $4 \cdot 15$

b. $2 \cdot 30$

c. $4 \cdot 15 + 2 \cdot 30 + 6$; $126

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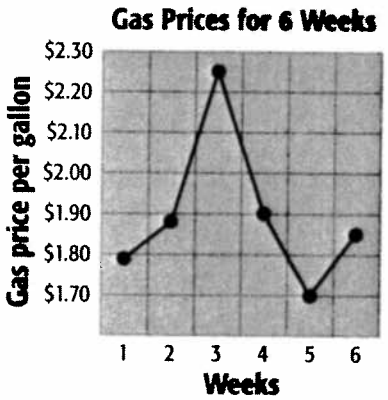
2-3 Exercises, pp. 72–73 (continued)

34. A

35. First add 2 and 4, and then square the result. Multiply 2 times 3, and subtract from 36. Then divide that answer by 6.

36. Possible answer: $3 \cdot 5 + 6^2 + 54 - 5 = 100$

37.



38. A

39. H

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2-4 Exercises, pp. 80–81

1. 2^4

2. $2 \cdot 3^3$

3. 3^4

4. $3 \cdot 5 \cdot 7$

5. $2 \cdot 3^2$

6. $2 \cdot 13$

7. $3^2 \cdot 5$

8. $2^4 \cdot 5$

9. $2 \cdot 5^2$

10. $2 \cdot 3^2 \cdot 5$

11. $2^2 \cdot 5^2$

12. $2^2 \cdot 3 \cdot 5$

13. $3^2 \cdot 7$

14. $2 \cdot 7$

15. $2^3 \cdot 5^3$

16. $2^2 \cdot 5 \cdot 7$

17. $2^2 \cdot 17$

18. $3 \cdot 5^2$

19. $2^3 \cdot 3 \cdot 5$

20. $2 \cdot 3 \cdot 5^2$

21. $3^3 \cdot 5$

22. $2^4 \cdot 3$

23. $2 \cdot 7 \cdot 11$

24. $2 \cdot 3 \cdot 5 \cdot 7$

25. $2^5 \cdot 5^2$

26. $2 \cdot 5 \cdot 31$

27. 5^4

28. $2^4 \cdot 5^3$

29. $3^2 \cdot 5 \cdot 7$

30. $2^3 \cdot 7 \cdot 13$

31. $3^3 \cdot 7$

32. $2^2 \cdot 3^2 \cdot 11$

33. $2 \cdot 11^2$

34. $2^2 \cdot 5^2 \cdot 7$

35. $11 \cdot 17$

36. $2^2 \cdot 13 \cdot 17$

37. $5^2 \cdot 7^2$

38. $2^5 \cdot 3^2$

39. $2^3 \cdot 3^2 \cdot 5$

40. $2^7 \cdot 3^2$

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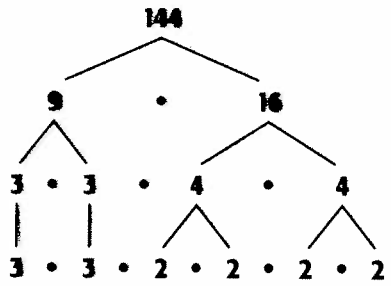
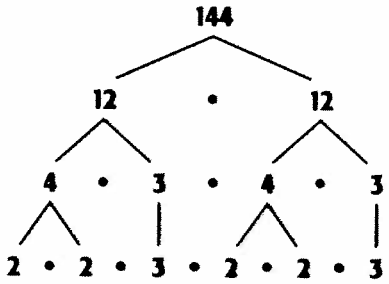
2-4 Exercises, pp. 80–81 (continued)

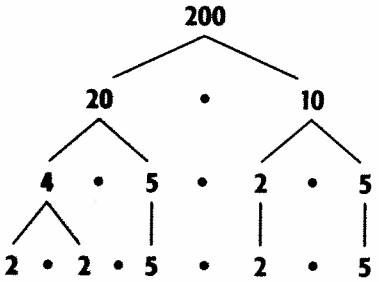
41. $2^4 \cdot 3^2$



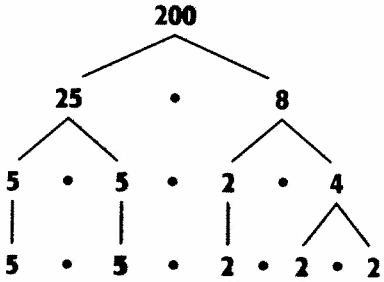
42. $2^4 \cdot 3^2$



43. $2^3 \cdot 5^2$



44. $2^3 \cdot 5^2$



45. $2 \cdot 32$, $4 \cdot 16$, $8 \cdot 8$

46. one

47. 180

48. 320

49. 448

50. 1,575

51. 462

52. 667

53. 117

54. 13,000

55. 210

56. 7

57. The chicken coop and the sheep pen have the correct dimensions.

58. 4 or 8 people

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2-4 Exercises, pp. 80–81 (continued)

59. Possible answer: A serving of watermelon has $3 \cdot 5$ calories. Write the number of calories as a composite number.

60. Possible answers: Begin by factoring the number into two factors. Continue to factor any number that is not prime until all the factors are prime. The answer will always be the same.

61. 2,520

62. 24

63. 5.5

64. 64

65. 23

66. 1

67. 343

68. D

69. H

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2-5 Exercises, pp. 84–85

1. 6

2. 9

3. 12

4. 3

5. 4

6. 10

7. 12 kits

8. 6

9. 12

10. 15

11. 11

12. 14

13. 38

14. 4

15. 2

16. 15

17. 26

18. 11

19. 3

20. 13 baskets

21. 1

22. 3

23. 2

24. 1

25. 22

26. 11

27. 40

28. 4

29. 1

30. 2

31. 7

32. 1

33. 3

34. 9

35. 13

36. 105 and 56 have a GCF of 7.

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2-5 Exercises, pp. 84–85 (continued)

37. $2^2 \cdot 3 \cdot 11$

38. 7 shelves

39. 4 sections

40. **a.** 7 students
b. 5 cookies, 3 pizza slices, 1 can of juice, and 2 apples

41. Possible answer: The first tree does not show the factor of 2 being brought to the last line. The factors of 50 should be $5 \cdot 5 \cdot 2$, so the GCF is 10.

42. Yes; every factor of the GCF of two numbers is also a factor of each number.

43. Possible answer: 12, 35, and 143.

44. 27

45.

Stems	Leaves
1	0 7 9
2	2 3 5 7 9
3	1 9

key: 2 | 5 means 25

46. 6

47. 13

48. 6

49. C

50. F

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2-6 Exercises, pp. 88–89

1. 28

2. 84

3. 48

4. 240

5. 45

6. 200

7. 24 minutes

8. 18

9. 24

10. 60

11. 42

12. 54

13. 120

14. 54

15. 80

16. 660

17. 180

18. 44

19. 360

20. 20 minutes

21. 60 minutes

22. 21

23. 10

24. 12

25. 36

26. 132

27. 108

28. 240

29. 90

30. 105

31. 12

32. 315

33. 144

34. 60

35. 60

36. 210

37. 42 days

38. Only if the two numbers are the same

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2-6 Exercises, pp. 88–89 (continued)

39. No. The LCM of 13 and 20 is 260.

40. Yes. The first day of every month is the first day of a week. The LCM of 6 and 30 is 30.

41. Possible answer: Dates on cyclical calendars are easier to keep track of. Cyclical calendars based on a solar year are particularly useful for keeping track of the seasons and the timing of holidays. On the other hand, Julian dates are useful for finding the elapsed time in days between dates.

42. October 12, 1492, is 11 Baktun, 13 Katun, 12 Tun, 4 Winal, 11 Kin

43. 1

44. 225

45. 1,000

46. 625

47. 1.0245×10^2

48. 6.21×10^7

49. 769

50. 800,000

51. D

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