

Chapter 1 Whole Numbers

Are You Prepared?

¹ 2	0	² 9	³ 9	1
		⁴ 6	4	
		⁵ 3	2	
		0		⁶ 1
⁷ 3	2	0	0	
	5			0
⁸ 2	7	0	0	0

Section 1.1 Study Tips

Group Activity: Becoming a Successful Student

- Answers will vary.
- Answers will vary.
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- Problem Recognition Exercises: page 114
Chapter Summary: page 123
Chapter Review Exercises: page 125
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Cumulative Review Exercises: page 129
- Answers will vary.
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Section 1.2 Introduction to Whole Numbers

Section 1.2 Practice Exercises

- Answers will vary.
- A **digit** is one of the numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9.
 - A number is written in **standard form** if the position of each digit determines the place value of the digit.
 - Periods** are groups of three digits separated by commas in a large number.
 - A number is written in **expanded form** if each digit is written with its place value units.
- 8,213,457
7: ones

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- 5: tens
4: hundreds
3: thousands
1: ten-thousands
2: hundred-thousands
8: millions
4. 103,596
6: ones
9: tens
5: hundreds
3: thousands
0: ten-thousands
1: hundred-thousands
5. $\underline{3}21$ tens
6. $\underline{6}89$ tens
7. $21\underline{4}$ ones
8. $73\underline{8}$ ones
9. $8\underline{7}10$ hundreds
10. $2\underline{2}93$ hundreds
11. $\underline{1}430$ thousands
12. $\underline{3}101$ thousands
13. $\underline{4}52,723$ hundred-thousands
14. $\underline{6}55,878$ hundred thousands
15. $\underline{1},023,676,207$ billions
16. $\underline{3},111,901,211$ billions
17. $\underline{22},422$ ten-thousands
18. $\underline{58},106$ ten-thousands
19. $5\underline{1},033,201$ millions
20. $9\underline{3},971,224$ millions
21. $\underline{10},677,881$ ten-millions
22. $3\underline{1},820$ mi² thousands
23. $\underline{7},653,468,440$ billions
24. $\underline{3}1,000$ ft ten-thousands
25. 5 tens + 8 ones
26. 7 tens + 1 one
27. 5 hundreds + 3 tens + 9 ones
28. 3 hundreds + 8 tens + 2 ones
29. 5 thousands + 2 hundreds + 3 ones
30. 7 thousands + 8 tens + 9 ones
31. 1 ten-thousand + 2 hundreds + 4 tens + 1 one
32. 2 ten-thousands + 8 hundreds + 7 tens + 3 ones
33. 524
34. 318
35. 150
36. 620
37. 1,906
38. 4,201
39. 85,007
40. 26,002
41. ones, thousands, millions, billions
42. ones, tens, hundreds, thousands
43. Two hundred forty-one
44. Three hundred twenty-seven
45. Six hundred three
46. One hundred eight
47. Thirty-one thousand, five hundred thirty
48. Fifty-two thousand, one hundred sixty
49. One hundred thousand, two hundred thirty-four
50. Four hundred thousand, one hundred ninety-nine

51. Nine thousand, five hundred thirty-five

52. One thousand, three hundred seventy-seven

53. Twenty thousand, three hundred twenty

54. One thousand, eight hundred

55. Five hundred ninety thousand, seven hundred twelve

56. Sixty million

57. 6005

58. 4004

59. 672,000

60. 248,000

61. 1,484,250

62. 2,647,520

63.  A number line from 0 to 13 with tick marks at every integer. Points are labeled: d at 1, a at 6, c at 8, and b at 13.

64.  A number line from 0 to 13 with tick marks at every integer. Points are labeled: b at 3, a at 5, d at 9, and c at 11.

65. Counting on a number line, 10 is 4 units to the right of 6.

66. Counting on a number line, 3 is 8 units to the left of 11.

67. Counting on a number line, 4 is 3 units to the left of 7.

68. Counting on a number line, 5 is 5 units to the right of 0.

69. $8 > 2$
8 is greater than 2, or 2 is less than 8.

70. $6 < 11$
6 is less than 11, or 11 is greater than 6.

71. $3 < 7$
3 is less than 7, or 7 is greater than 3.

72. $14 > 12$
14 is greater than 12, or 12 is less than 14.

73. $6 < 11$

74. $14 > 13$

75. $21 > 18$

76. $5 < 7$

77. $3 < 7$

78. $14 < 24$

79. $95 > 89$

80. $28 < 30$

81. $0 < 3$

82. $8 > 0$

83. $90 < 91$

84. $48 > 47$

85. False; 12 is made up of the digits 1 and 2.

86. False; 26 is made up of the digits 2 and 6.

87. 99

88. 999

89. There is no greatest whole number.

90. 0 is the least whole number.

91. 10,000,000 7 zeros

92. 100,000,000,000 11 zeros

93. 964

94. 840

Section 1.3 Addition and Subtraction of Whole Numbers and Perimeter

Section 1.3 Practice Exercises

1. Answers will vary.
2. (a) A **sum** is the result of an addition problem.
 (b) The **addends** are the numbers being added.
 (c) A **polygon** is a flat figure formed by line segments connected at their ends.
 (d) The **perimeter** of a polygon is the distance around the outside of the figure.
 (e) The **difference** is the result of a subtraction problem.
- (f) The **subtrahend** is the number being subtracted.
 (g) The **minuend** is the number being subtracted from.
 (h) A **variable** is a letter or symbol that represents a number.
3. 3 hundreds + 5 tens + 1 one
4. 2004
5. 4012
6. 6206
7. Fill in the table. Use the number line if necessary.

+	0	1	2	3	4	5	6	7	8	9
0	0	1	2	3	4	5	6	7	8	9
1	1	2	3	4	5	6	7	8	9	10
2	2	3	4	5	6	7	8	9	10	11
3	3	4	5	6	7	8	9	10	11	12
4	4	5	6	7	8	9	10	11	12	13
5	5	6	7	8	9	10	11	12	13	14
6	6	7	8	9	10	11	12	13	14	15
7	7	8	9	10	11	12	13	14	15	16
8	8	9	10	11	12	13	14	15	16	17
9	9	10	11	12	13	14	15	16	17	18

8. $11 + 10 = 21$
 Addends: 11, 10
 Sum: 21
9. $1 + 13 + 4 = 18$
 Addends: 1, 13, 4
 Sum: 18
10. $5 + 8 + 2 = 15$
 Addends: 5, 8, 2
 Sum: 15
11. $42 = 4 \text{ tens} + 2 \text{ ones}$
 $+ 33 = 3 \text{ tens} + 3 \text{ ones}$
 $\hline 75 = 7 \text{ tens} + 5 \text{ ones}$
12. $21 = 2 \text{ tens} + 1 \text{ one}$
 $+ 53 = 5 \text{ tens} + 3 \text{ ones}$
 $\hline 74 = 7 \text{ tens} + 4 \text{ ones}$
13. $12 = 1 \text{ ten} + 2 \text{ ones}$
 $15 = 1 \text{ ten} + 5 \text{ ones}$
 $+ 32 = 3 \text{ tens} + 2 \text{ ones}$
 $\hline 59 = 5 \text{ tens} + 9 \text{ ones}$
14. $10 = 1 \text{ ten} + 0 \text{ ones}$
 $8 = 0 \text{ tens} + 8 \text{ ones}$
 $\hline 30 = 3 \text{ tens} + 0 \text{ ones}$
 $48 = 4 \text{ tens} + 8 \text{ ones}$

Section 1.3 Addition and Subtraction of Whole Numbers and Perimeter

$$\begin{array}{r} 15. \quad 890 \\ + 107 \\ \hline 997 \end{array}$$

$$\begin{array}{r} 16. \quad 444 \\ + 354 \\ \hline 798 \end{array}$$

$$\begin{array}{r} 17. \quad 4 \\ 13 \\ + 102 \\ \hline 119 \end{array}$$

$$\begin{array}{r} 18. \quad 11 \\ 221 \\ + 5 \\ \hline 237 \end{array}$$

$$\begin{array}{r} 19. \quad 1 \\ 76 \\ + 45 \\ \hline 121 \end{array}$$

$$\begin{array}{r} 20. \quad 1 \\ 25 \\ + 59 \\ \hline 84 \end{array}$$

$$\begin{array}{r} 21. \quad 1 \\ 87 \\ + 24 \\ \hline 111 \end{array}$$

$$\begin{array}{r} 22. \quad 1 \\ 38 \\ + 77 \\ \hline 115 \end{array}$$

$$\begin{array}{r} 23. \quad 658 \\ + 231 \\ \hline 889 \end{array}$$

$$\begin{array}{r} 24. \quad 1 \\ 642 \\ + 295 \\ \hline 937 \end{array}$$

$$\begin{array}{r} 25. \quad 11 \\ 152 \\ + 549 \\ \hline 701 \end{array}$$

$$\begin{array}{r} 26. \quad 11 \\ 462 \\ + 388 \\ \hline 850 \end{array}$$

$$\begin{array}{r} 27. \quad 11 \\ 79 \\ 112 \\ + 12 \\ \hline 203 \end{array}$$

$$\begin{array}{r} 28. \quad 11 \\ 62 \\ 907 \\ + 34 \\ \hline 1003 \end{array}$$

$$\begin{array}{r} 29. \quad 11 \\ 4980 \\ + 10223 \\ \hline 15,203 \end{array}$$

$$\begin{array}{r} 30. \quad 11 \\ 23112 \\ 892 \\ \hline 24,004 \end{array}$$

$$\begin{array}{r} 31. \quad 11 \ 1 \dot{2} \\ 10 \ 223 \\ 25 \ 782 \\ 4980 \\ \hline 40,985 \end{array}$$

$$\begin{array}{r} 32. \quad 11 \ 11 \\ 92 \ 377 \\ 5 \ 622 \\ 34 \ 659 \\ \hline 132,658 \end{array}$$

33. $101 + 44 = 44 + 101$

34. $8 + 13 = 13 + 8$

35. $x + y = y + x$

36. $t + q = q + t$

37. $(23 + 9) + 10 = 23 + (9 + 10)$

38. $7 + (12 + 8) = (7 + 12) + 8$

39. $r + (s + t) = (r + s) + t$

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40. $(c + d) + e = c + (d + e)$

41. The commutative property changes the order of the addends, and the associative property changes the grouping.

42. The sum of any number and 0 is that number.

(a) $423 + 0 = 423$

(b) $0 + 25 = 25$

(c) $67 + 0 = 67$

(d) $0 + x = x$

43. $12 - 8 = 4$

minuend: 12

subtrahend: 8

difference: 4

44.
$$\begin{array}{r} 9 \\ -6 \\ \hline 3 \end{array}$$

minuend: 9

subtrahend: 6

difference: 3

45. $27 - 9 = 18$ because $18 + 9 = 27$.

46. $20 - 8 = 12$ because $12 + 8 = 20$.

47. $102 - 75 = 27$ because $27 + 75 = 102$.

48. $211 - 45 = 166$ because $166 + 45 = 211$.

49. $8 - 3 = 5$ Check: $5 + 3 = 8$

50. $7 - 2 = 5$ Check: $5 + 2 = 7$

51. $4 - 1 = 3$ Check: $3 + 1 = 4$

52. $9 - 1 = 8$ Check: $8 + 1 = 9$

53.
$$\begin{array}{r} 1347 \\ -221 \\ \hline 1126 \end{array} \quad \text{Check: } \begin{array}{r} 1126 \\ +221 \\ \hline 1347 \end{array} \checkmark$$

54.
$$\begin{array}{r} 4865 \\ -713 \\ \hline 4152 \end{array} \quad \text{Check: } \begin{array}{r} 4152 \\ +713 \\ \hline 4865 \end{array} \checkmark$$

55.
$$\begin{array}{r} 14,356 \\ -13,253 \\ \hline 1,103 \end{array} \quad \text{Check: } \begin{array}{r} 1,103 \\ +13,253 \\ \hline 14,356 \end{array} \checkmark$$

56.
$$\begin{array}{r} 34,550 \\ -31,450 \\ \hline 3100 \end{array} \quad \text{Check: } \begin{array}{r} 3100 \\ +31,450 \\ \hline 34,550 \end{array} \checkmark$$

57.
$$\begin{array}{r} 616 \\ \cancel{7} \\ -59 \\ \hline 17 \end{array} \quad \text{Check: } \begin{array}{r} 1 \\ 17 \\ +59 \\ \hline 76 \end{array} \checkmark$$

58.
$$\begin{array}{r} 514 \\ \cancel{6} \\ -48 \\ \hline 16 \end{array} \quad \text{Check: } \begin{array}{r} 1 \\ 16 \\ +48 \\ \hline 64 \end{array} \checkmark$$

59.
$$\begin{array}{r} 10 \\ 6 \cancel{1} 0 \\ \cancel{7} \cancel{1} \cancel{0} \\ -189 \\ \hline 521 \end{array} \quad \text{Check: } \begin{array}{r} 11 \\ 521 \\ +189 \\ \hline 710 \end{array} \checkmark$$

60.
$$\begin{array}{r} 410 \\ \cancel{8} \cancel{0} \\ -303 \\ \hline 547 \end{array} \quad \text{Check: } \begin{array}{r} 1 \\ 547 \\ +303 \\ \hline 850 \end{array} \checkmark$$

61.
$$\begin{array}{r} 99 \\ 5 \cancel{1} \cancel{0} \cancel{1} 2 \\ \cancel{8} \cancel{0} \cancel{0} \cancel{2} \\ -1238 \\ \hline 4764 \end{array} \quad \text{Check: } \begin{array}{r} 111 \\ 4764 \\ +1238 \\ \hline 6002 \end{array} \checkmark$$

62.
$$\begin{array}{r} 99 \\ 2 \cancel{1} \cancel{0} \cancel{1} 0 \\ \cancel{8} 0 0 0 \\ -2356 \\ \hline 644 \end{array} \quad \text{Check: } \begin{array}{r} 111 \\ 644 \\ +2356 \\ \hline 3000 \end{array} \checkmark$$

63.
$$\begin{array}{r} 010 \\ \cancel{1} \cancel{0}, 425 \\ -9022 \\ \hline 1,403 \end{array} \quad \text{Check: } \begin{array}{r} 1403 \\ +9022 \\ \hline 10,425 \end{array} \checkmark$$

64.
$$\begin{array}{r} 9 \\ 1138 \cancel{1} 1 \\ \cancel{2} \cancel{2}, \cancel{0} \cancel{0} \cancel{1} \\ -8064 \\ \hline 15,837 \end{array} \quad \text{Check: } \begin{array}{r} 111 \\ 15837 \\ +8064 \\ \hline 23,901 \end{array} \checkmark$$

Section 1.3 Addition and Subtraction of Whole Numbers and Perimeter

$$\begin{array}{r}
 11 \\
 5 \cancel{1} 10 \\
 \cancel{6} \cancel{2} \cancel{0} 88 \\
 - 59 \ 871 \\
 \hline
 2,217
 \end{array}
 \quad
 \text{Check: }
 \begin{array}{r}
 11 \\
 2 \ 217 \\
 + 59 \ 871 \\
 \hline
 62,088 \checkmark
 \end{array}$$

$$\begin{array}{r}
 11 \ 10 \ 10 \\
 2 \cancel{1} \ \cancel{0} \ \cancel{0} 12 \\
 \cancel{3} \cancel{2}, \cancel{1} \ \cancel{1} \ \cancel{2} \\
 - 28, \ 3 \ 3 \ 4 \\
 \hline
 3 \ 77 \ 8
 \end{array}
 \quad
 \text{Check: }
 \begin{array}{r}
 1 \ 11 \\
 13 \ 778 \\
 + 28 \ 334 \\
 \hline
 32,112 \checkmark
 \end{array}$$

$$\begin{array}{r}
 16 \ 9 \\
 2 \ \cancel{8} \ \cancel{0} 10 \\
 \cancel{3} \cancel{7} \ \cancel{0} \ 0 \\
 - 29 \ 87 \\
 \hline
 7 \ 13
 \end{array}
 \quad
 \text{Check: }
 \begin{array}{r}
 1 \ 11 \\
 713 \\
 + 2987 \\
 \hline
 3700 \checkmark
 \end{array}$$

$$\begin{array}{r}
 9 \ 9 \\
 7 \ \cancel{0} \ \cancel{0} \ 10 \\
 \cancel{8} \ \cancel{0} \ \cancel{0} \ \cancel{0} \\
 - 3 \ 7 \ 8 \ 8 \\
 \hline
 4 \ 2 \ 1 \ 2
 \end{array}
 \quad
 \text{Check: }
 \begin{array}{r}
 111 \\
 4212 \\
 + 3788 \\
 \hline
 8000 \checkmark
 \end{array}$$

$$\begin{array}{r}
 13 \\
 1 \ \cancel{3} \ 13 \\
 \cancel{3} \cancel{2}, \cancel{4} \ \cancel{3} \ 9 \\
 - 1 \ 4 \ 98 \\
 \hline
 30,941
 \end{array}
 \quad
 \text{Check: }
 \begin{array}{r}
 1 \ 1 \\
 30 \ 941 \\
 + 1 \ 498 \\
 \hline
 32,439 \checkmark
 \end{array}$$

$$\begin{array}{r}
 1 \ 11 \\
 \cancel{2} \cancel{1} \ 335 \\
 - 4 \ 123 \\
 \hline
 17,212
 \end{array}
 \quad
 \text{Check: }
 \begin{array}{r}
 1 \\
 17 \ 212 \\
 + 4 \ 123 \\
 \hline
 21,335 \checkmark
 \end{array}$$

$$\begin{array}{r}
 9 \\
 7 \ \cancel{0} 10 \ 2 \ 14 \\
 \cancel{8}, \ \cancel{0} \ \cancel{0} 7, \ \cancel{2} \ \cancel{4} \\
 - 2, \ 3 \ 45, \ 11 \ 5 \\
 \hline
 5, \ 6 \ 62, \ 11 \ 9
 \end{array}
 \quad
 \text{Check: }
 \begin{array}{r}
 1 \ 1 \ 1 \\
 5 \ 662 \ 119 \\
 + 2 \ 345 \ 115 \\
 \hline
 8,007,234 \checkmark
 \end{array}$$

$$\begin{array}{r}
 9 \\
 2 \ \cancel{0} 14 \ 4 \ 16 \\
 \cancel{3} \ \cancel{0} \ \cancel{4} 5 \ \cancel{3} \ \cancel{0} 7 \\
 - 1 \ 8 \ 71 \ 4 \ 95 \\
 \hline
 1, \ 1 \ 74, \ 0 \ 72
 \end{array}
 \quad
 \text{Check: }
 \begin{array}{r}
 1 \ 1 \\
 1 \ 174 \ 072 \\
 + 1 \ 871 \ 495 \\
 \hline
 3,045,567 \checkmark
 \end{array}$$

4 - 7 means 4 minus 7 which results in a difference of -3.

74. Subtraction is not associative. For example, $10 - (6 - 2) = 10 - 4 = 6$, and $(10 - 6) - 2 = 4 - 2 = 2$. Therefore $10 - (6 - 2)$ does not equal $(10 - 6) - 2$.

$$75. \ 13 + 7 \quad \begin{array}{r} 1 \\ 13 \\ + 7 \\ \hline 20 \end{array}$$

$$76. \ 100 + 42 \quad \begin{array}{r} 100 \\ + 42 \\ \hline 142 \end{array}$$

$$77. \ 7 + 45 \quad \begin{array}{r} 1 \\ 7 \\ + 45 \\ \hline 52 \end{array}$$

$$78. \ 23 + 81 \quad \begin{array}{r} 23 \\ + 81 \\ \hline 104 \end{array}$$

$$79. \ 18 + 5 \quad \begin{array}{r} 1 \\ 18 \\ + 5 \\ \hline 23 \end{array}$$

$$80. \ 76 + 2 \quad \begin{array}{r} 76 \\ + 2 \\ \hline 78 \end{array}$$

$$81. \ 1523 + 90 \quad \begin{array}{r} 1 \cancel{2} \\ 1523 \\ + 90 \\ \hline 1613 \end{array}$$

$$82. \ 1320 + 448 \quad \begin{array}{r} 1320 \\ + 448 \\ \hline 1768 \end{array}$$

$$83. \ 5 + 39 + 81 \quad \begin{array}{r} 1 \\ 5 \\ 39 \\ + 81 \\ \hline 125 \end{array}$$

73. The expression $7 - 4$ means 7 minus 4, yielding a difference of 3. The expression

$$\begin{array}{r} 84. \quad 78 \\ - 6 \\ \hline 72 \end{array}$$

$$\begin{array}{r} 85. \quad 422 \\ - 100 \\ \hline 322 \end{array}$$

$$\begin{array}{r} 86. \quad 89 \\ - 42 \\ \hline 47 \end{array}$$

$$\begin{array}{r} 8 \\ 87. \quad 10\cancel{0} \\ - 72 \\ \hline 1018 \end{array}$$

$$\begin{array}{r} 011 \\ 88. \quad 3\cancel{1}\cancel{1} \\ - 60 \\ \hline 3051 \end{array}$$

$$\begin{array}{r} 410 \\ 89. \quad \cancel{8}\cancel{0} \\ - 13 \\ \hline 37 \end{array}$$

$$\begin{array}{r} 90. \quad 405 \\ - 103 \\ \hline 302 \end{array}$$

$$\begin{array}{r} 9 13 \\ 91. \quad \cancel{10}\cancel{0} \\ - 35 \\ \hline 68 \end{array}$$

$$\begin{array}{r} 8 11 \\ 92. \quad \cancel{0}\cancel{1} \\ - 14 \\ \hline 77 \end{array}$$

$$\begin{array}{r} 12 1 \\ 93. \quad 26,548,000 \\ \quad 26,930,000 \\ + 20,805,000 \\ \hline 74,283,000 \end{array}$$

The shows had a total of 74,283,000 viewers.

$$\begin{array}{r} 3 3 \\ 94. \quad 38 \\ \quad 54 \\ \quad 44 \\ \quad 61 \\ \quad 97 \\ \quad 103 \\ + 124 \\ \hline 521 \end{array}$$

521 deliveries were made.

$$\begin{array}{r} 11 \\ 95. \quad 115 \\ \quad 104 \\ \quad 93 \\ + 111 \\ \hline 423 \end{array}$$

423 desks were delivered.

$$\begin{array}{r} 1 \\ 96. \quad \$60 \\ \quad 82 \\ + 58 \\ \hline \$200 \end{array}$$

The total amount is \$200.

$$\begin{array}{r} 1 10 211\cancel{0} \\ 97. \quad \cancel{20}, \cancel{20} \text{ ft} \\ - 14,246 \text{ ft} \\ \hline 6,074 \text{ ft} \end{array}$$

Denali is 6074 ft higher than White Mountain Peak.

$$\begin{array}{r} 4 15 \\ 98. \quad \cancel{8}\cancel{8} \\ - 39 \\ \hline 16 \end{array}$$

16 DVDs are left.

$$\begin{array}{r} 9 9 \\ 7\cancel{1}\cancel{0}\cancel{10} \\ 99. \quad 239\cancel{8}000 \\ - 2390252 \\ \hline 7748 \end{array}$$

The difference is 7748 marriages.

$$\begin{array}{r} 100. \quad 2,398,000 \\ - 2,248,000 \\ \hline 150,000 \end{array}$$

The decrease is 150,000 marriages.

Section 1.3 Addition and Subtraction of Whole Numbers and Perimeter

$$\begin{array}{r}
 13 \\
 3 \cancel{3} 13 \\
 2 \cancel{4} \cancel{4} \cancel{3} 489 \\
 - 2248000 \\
 \hline
 195,489
 \end{array}$$

The difference is 195,489 marriages.

$$\begin{array}{r}
 102. \quad 2,398,000 \\
 - 2,336,000 \\
 \hline
 62,000
 \end{array}$$

The greatest increase occurred between 1995–2000; the increase was 62,000 marriages.

$$\begin{array}{r}
 11111 \\
 103. \quad 100,052 \\
 675,038 \\
 + 45,934 \\
 \hline
 821,024
 \end{array}$$

There are 821,024 nonteachers.

$$\begin{array}{r}
 111 \\
 104. \quad \$7329 \\
 9560 \\
 1248 \\
 + 3500 \\
 \hline
 \$21,637
 \end{array}$$

The total cost is \$21,637.

$$\begin{array}{r}
 105. \quad 6288 \\
 - 2032 \\
 \hline
 4256
 \end{array}$$

Mt. Washington is 4256 ft higher than the Pinkham Notch Visitor Center.

$$\begin{array}{r}
 913 \\
 106. \quad 3 \cancel{10} \cancel{14} \cancel{13} \\
 \cancel{4} \cancel{0} \cancel{4} \cancel{3} \\
 - 2064 \\
 \hline
 1979
 \end{array}$$

The Lion King had been performed 1979 more times.

$$\begin{array}{r}
 107. \quad 26,960 \\
 + 2600 \\
 \hline
 29,560
 \end{array}$$

Jeannette will pay \$29,560 for 1 year.

$$\begin{array}{r}
 11\cancel{Z} \\
 108. \quad 138 \\
 + 96 \\
 \hline
 234
 \end{array}$$

They are 234 miles apart.

$$\begin{array}{r}
 109. \quad 35 \text{ cm} \\
 35 \text{ cm} \\
 + 34 \text{ cm} \\
 \hline
 104 \text{ cm}
 \end{array}$$

$$\begin{array}{r}
 110. \quad 27 \text{ in.} \\
 13 \text{ in.} \\
 + 20 \text{ in.} \\
 \hline
 60 \text{ in.}
 \end{array}$$

$$\begin{array}{r}
 111. \quad 6 \text{ yd} \\
 10 \text{ yd} \\
 11 \text{ yd} \\
 3 \text{ yd} \\
 5 \text{ yd} \\
 + 7 \text{ yd} \\
 \hline
 42 \text{ yd}
 \end{array}$$

$$\begin{array}{r}
 112. \quad 200 \text{ yd} \\
 136 \text{ yd} \\
 142 \text{ yd} \\
 98 \text{ yd} \\
 58 \text{ yd} \\
 + 38 \text{ yd} \\
 \hline
 672 \text{ yd}
 \end{array}$$

$$\begin{array}{r}
 113. \quad 94 \text{ ft} \\
 94 \text{ ft} \\
 50 \text{ ft} \\
 + 50 \text{ ft} \\
 \hline
 288 \text{ ft}
 \end{array}$$

$$\begin{array}{r}
 114. \quad 90 \text{ ft} \\
 90 \text{ ft} \\
 90 \text{ ft} \\
 + 90 \text{ ft} \\
 \hline
 360 \text{ ft}
 \end{array}$$

$$\begin{array}{r}
 115. \quad 14 \text{ m} \quad 39 \text{ m} \\
 + 12 \text{ m} \quad - 26 \text{ m} \\
 \hline
 26 \text{ m} \quad 13 \text{ m}
 \end{array}$$

The missing length is 13 m.

$$\begin{array}{r}
 11 \\
 116. \quad 139 \text{ cm} \\
 \quad 87 \text{ cm} \quad 547 \text{ cm} \\
 + 201 \text{ cm} \quad - 427 \text{ cm} \\
 \hline
 \quad 427 \text{ cm} \quad 120 \text{ cm}
 \end{array}$$

The missing length is 120 cm.

$$\begin{array}{r}
 117. \quad 45,418 \\
 \quad 81,990 \\
 \quad 9,063 \\
 + 56,309 \\
 \hline
 \quad 192,780
 \end{array}$$

$$\begin{array}{r}
 118. \quad 9,300,050 \\
 \quad 7,803,513 \\
 \quad 3,480,009 \\
 + 907,822 \\
 \hline
 \quad 21,491,394
 \end{array}$$

$$\begin{array}{r}
 119. \quad 3,421,019 \\
 \quad 822,761 \\
 \quad 1,003,721 \\
 + 9,678 \\
 \hline
 \quad 5,257,179
 \end{array}$$

$$\begin{array}{r}
 120. \quad 4,905,620 \\
 \quad - 458,318 \\
 \hline
 \quad 4,447,302
 \end{array}$$

$$\begin{array}{r}
 121. \quad 953,400,415 \\
 \quad - 56,341,902 \\
 \hline
 \quad 897,058,513
 \end{array}$$

$$\begin{array}{r}
 122. \quad 82,025,160 \\
 \quad - 79,118,705 \\
 \hline
 \quad 2,906,455
 \end{array}$$

$$\begin{array}{r}
 123. \quad 103,718 \text{ mi}^2 \\
 \quad - 54,310 \text{ mi}^2 \\
 \hline
 \quad 49,408 \text{ mi}^2
 \end{array}$$

The difference in land area between Colorado and Wisconsin is $49,408 \text{ mi}^2$.

$$\begin{array}{r}
 124. \quad 41,217 \text{ mi}^2 \\
 \quad - 24,078 \text{ mi}^2 \\
 \hline
 \quad 17,139 \text{ mi}^2
 \end{array}$$

Tennessee has $17,139 \text{ mi}^2$ more than West Virginia.

$$\begin{array}{r}
 125. \quad 1,045 \text{ mi}^2 \\
 \quad 41,217 \text{ mi}^2 \\
 + 54,310 \text{ mi}^2 \\
 \hline
 \quad 96,572 \text{ mi}^2
 \end{array}$$

The combined land area of Rhode Island, Tennessee, and Wisconsin is $96,572 \text{ mi}^2$.

$$\begin{array}{r}
 126. \quad 1,045 \text{ mi}^2 \\
 \quad 41,217 \text{ mi}^2 \\
 \quad 24,078 \text{ mi}^2 \\
 \quad 54,310 \text{ mi}^2 \\
 + 103,718 \text{ mi}^2 \\
 \hline
 \quad 224,368 \text{ mi}^2
 \end{array}$$

The combined land area of the five states is $224,368 \text{ mi}^2$.

Section 1.4 Rounding and Estimating

Section 1.4 Practice Exercises

1. Answers will vary

2. **Rounding** a number allows us to give an approximation of the number to a specific place value.

$$\begin{array}{r}
 3. \quad 59 \\
 \quad - 33 \\
 \hline
 \quad 26
 \end{array}$$

$$\begin{array}{r}
 4. \quad 01210 \\
 \quad \cancel{1} \cancel{3} \cancel{0} \\
 \quad - 98 \\
 \hline
 \quad 32
 \end{array}$$

5.
$$\begin{array}{r} 1\ 11 \\ 4009 \\ + 998 \\ \hline 5007 \end{array}$$
6.
$$\begin{array}{r} 12,033 \\ + 23,441 \\ \hline 35,474 \end{array}$$
7. Ten-thousands
8. Hundreds
9. If the digit in the tens place is 0, 1, 2, 3, or 4, then change the tens and ones digits to 0. If the digit in the tens place is 5, 6, 7, 8, or 9, increase the digit in the hundreds place by 1 and change the tens and ones digits to 0.
10. If the digit in the ones place is 0, 1, 2, 3, or 4, then change the ones digits to 0. If the digit in the ones place is 5, 6, 7, 8, or 9, increase the digit in the tens place by 1 and change the ones digit to 0.
11. $34\boxed{2} \approx 340$
12. $83\boxed{4} \approx 830$
13. $72\boxed{5} \approx 730$
14. $44\boxed{5} \approx 450$
15. $93\boxed{8}4 \approx 9400$
16. $83\boxed{6}3 \approx 8400$
17. $85\boxed{3}9 \approx 8500$
18. $98\boxed{1}7 \approx 9800$
19. $34\boxed{9}92 \approx 35,000$
20. $76\boxed{8}31 \approx 77,000$
21. $2\boxed{5}78 \approx 3000$
22. $3\boxed{5}11 \approx 4000$
23. $99\boxed{8}2 \approx 10,000$
24. $79\boxed{7}4 \approx 8000$
25. $109\boxed{3}37 \approx 109,000$
26. $437\boxed{2}08 \approx 437,000$
27. $48\boxed{9},090 \approx 490,000$
28. $38\boxed{8},725 \approx 390,000$
29. $\$148\boxed{4}31,020 \approx \$148,000,000$
30. $\$33\boxed{0}50 \approx \$33,000$
31. $238\boxed{8}63 \text{ mi} \approx 239,000 \text{ mi}$
32. $4\boxed{9}2,000 \text{ m}^2 \approx 500,000 \text{ m}^2$
33.
$$\begin{array}{r} 57 \rightarrow 60 \\ 82 \rightarrow 80 \\ + 21 \rightarrow + 20 \\ \hline 160 \end{array}$$
34.
$$\begin{array}{r} 33 \rightarrow 30 \\ 78 \rightarrow 80 \\ + 41 \rightarrow + 40 \\ \hline 150 \end{array}$$
35.
$$\begin{array}{r} 639 \rightarrow 640 \\ - 422 \rightarrow - 420 \\ \hline 220 \end{array}$$
36.
$$\begin{array}{r} 851 \rightarrow 850 \\ - 399 \rightarrow - 400 \\ \hline 450 \end{array}$$
37.
$$\begin{array}{r} 892 \rightarrow 900 \\ + 129 \rightarrow + 100 \\ \hline 1000 \end{array}$$
38.
$$\begin{array}{r} 347 \rightarrow 300 \\ + 563 \rightarrow + 600 \\ \hline 900 \end{array}$$
39.
$$\begin{array}{r} 3412 \rightarrow 3400 \\ - 1252 \rightarrow - 1300 \\ \hline 2100 \end{array}$$
40.
$$\begin{array}{r} 9771 \rightarrow 9800 \\ - 4544 \rightarrow - 4500 \\ \hline 5300 \end{array}$$

Chapter 1 Whole Numbers

$$\begin{array}{r}
 41. \quad 97,404,576 \rightarrow 97,000,000 \\
 + 53,695,428 \rightarrow + 54,000,000 \\
 \hline
 151,000,000
 \end{array}$$

\$151,000,000 was brought in by Mars.

$$\begin{array}{r}
 42. \quad 81,296,784 \rightarrow 81,000,000 \\
 54,391,268 \rightarrow 54,000,000 \\
 + 38,168,580 \rightarrow + 38,000,000 \\
 \hline
 173,000,000
 \end{array}$$

\$173,000,000 was brought in by Hershey.

$$\begin{array}{r}
 43. \quad 71,339,710 \rightarrow 71,000,000 \\
 - 59,684,076 \rightarrow - 60,000,000 \\
 \hline
 11,000,000
 \end{array}$$

Neil Diamond earned \$11,000,000 more.

$$\begin{array}{r}
 44. \quad 4844 \rightarrow 5000 \\
 - 1190 \rightarrow - 1000 \\
 \hline
 4000
 \end{array}$$

4000 more women gave birth.

$$\begin{array}{r}
 45. \quad \$3,316,897 \rightarrow \$3,300,000 \\
 3,272,028 \rightarrow 3,300,000 \\
 + 3,360,289 \rightarrow + 3,400,000 \\
 \hline
 \$10,000,000
 \end{array}$$

$$\begin{array}{r}
 46. \quad \$3,470,295 \rightarrow \$3,500,000 \\
 3,173,050 \rightarrow 3,200,000 \\
 + 1,970,380 \rightarrow + 2,000,000 \\
 \hline
 \$8,700,000
 \end{array}$$

47. (a) 2003; \$3,470,295 → \$3,500,000

$$\begin{array}{r}
 55. \quad 105 \text{ in.} \rightarrow 110 \text{ in.} \\
 57 \text{ in.} \rightarrow 60 \text{ in.} \\
 57 \text{ in.} \rightarrow 60 \text{ in.} \\
 105 \text{ in.} \rightarrow 110 \text{ in.} \\
 57 \text{ in.} \rightarrow 60 \text{ in.} \\
 + 57 \text{ in.} \rightarrow + 60 \text{ in.} \\
 \hline
 460 \text{ in.}
 \end{array}$$

(b) 2005; \$1,970,380 → \$2,000,000

$$\begin{array}{r}
 48. \quad \$3,500,000 \\
 - 2,000,000 \\
 \hline
 \$1,500,000
 \end{array}$$

49. Massachusetts; 78,815 → 79,000 students

50. Vermont; 8059 → 8000 students

$$\begin{array}{r}
 51. \quad 79,000 \\
 - 8,000 \\
 \hline
 71,000
 \end{array}$$

The difference is 71,000 students.

$$\begin{array}{r}
 52. \quad 45,879 \rightarrow 46,000 \\
 9137 \rightarrow 9,000 \\
 16,756 \rightarrow 17,000 \\
 78,815 \rightarrow 79,000 \\
 17,422 \rightarrow 17,000 \\
 13,172 \rightarrow 13,000 \\
 + 8059 \rightarrow + 8,000 \\
 \hline
 189,000
 \end{array}$$

The total is 189,000 students.

$$\begin{array}{r}
 53. \quad 3045 \text{ mm} \rightarrow 3000 \text{ mm} \\
 1892 \text{ mm} \rightarrow 2000 \text{ mm} \\
 3045 \text{ mm} \rightarrow 3000 \text{ mm} \\
 + 1892 \text{ mm} \rightarrow + 2000 \text{ mm} \\
 \hline
 10,000 \text{ mm}
 \end{array}$$

$$\begin{array}{r}
 54. \quad 1851 \text{ cm} \rightarrow 2000 \text{ cm} \\
 1782 \text{ cm} \rightarrow 2000 \text{ cm} \\
 1851 \text{ cm} \rightarrow 2000 \text{ cm} \\
 + 1782 \text{ cm} \rightarrow + 2000 \text{ cm} \\
 \hline
 8000 \text{ cm}
 \end{array}$$

$$\begin{array}{r}
 56. \quad 182 \text{ ft} \rightarrow 200 \text{ ft} \\
 121 \text{ ft} \rightarrow 100 \text{ ft} \\
 182 \text{ ft} \rightarrow 200 \text{ ft} \\
 169 \text{ ft} \rightarrow 200 \text{ ft} \\
 + 169 \text{ ft} \rightarrow + 200 \text{ ft} \\
 \hline
 900 \text{ ft}
 \end{array}$$

Section 1.5 Multiplication of Whole Numbers and Area

Section 1.5 Practice Exercises

1. Answers will vary.

2. (a) **Multiplication** is repeated addition.

Section 1.5 Multiplication of Whole Numbers and Area

- (b) The numbers that are multiplied are called **factors**.
 (c) The result of multiplication is called the **product**.
 (d) **Area** measures the amount of surface contained within a region.
 (e) The **area of a rectangle** is the product of the length and the width.

$$\begin{array}{r} 3. \quad 869,240 \rightarrow 870,000 \\ \quad 34,921 \rightarrow 30,000 \\ \quad +108,332 \rightarrow +110,000 \\ \hline \quad \quad \quad 1,010,000 \end{array}$$

$$\begin{array}{r} 4. \quad 907,801 \rightarrow 900,000 \\ \quad -413,560 \rightarrow -400,000 \\ \hline \quad \quad \quad 500,000 \end{array}$$

$$\begin{array}{r} 5. \quad 8821 \rightarrow 8800 \\ \quad -3401 \rightarrow -3400 \\ \hline \quad \quad \quad 5400 \end{array}$$

6.

×	0	1	2	3	4	5	6	7	8	9
0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9
2	0	2	4	6	8	10	12	14	16	18
3	0	3	6	9	12	15	18	21	24	27
4	0	4	8	12	16	20	24	28	32	36
5	0	5	10	15	20	25	30	35	40	45
6	0	6	12	18	24	30	36	42	48	54
7	0	7	14	21	28	35	42	49	56	63
8	0	8	16	24	32	40	48	56	64	72
9	0	9	18	27	36	45	54	63	72	81

7. $5 + 5 + 5 + 5 + 5 + 5 = 6 \times 5 = 30$
 8. $2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 = 9 \times 2 = 18$
 9. $9 + 9 + 9 = 3 \times 9 = 27$
 10. $7 + 7 + 7 + 7 = 4 \times 7 = 28$
 11. $13 \times 42 = 546$
 factors: 13, 42; product: 546
 12. $26 \times 9 = 234$
 factors: 26, 9; product: 234
 13. $3 \cdot 5 \cdot 2 = 30$
 factors: 3, 5, 2; product: 30
 14. $4 \cdot 3 \cdot 8 = 96$
 factors: 4, 3, 8; product: 96
 15. For example: 5×12 ; $5 \cdot 12$; $5(12)$
 16. For example: 23×14 ; $23 \cdot 14$; $23(14)$
 17. d
 18. a
 19. e
 20. b
 21. c
 22. a
 23. $14 \cdot 8 = 8 \cdot 14$
 24. $3 \cdot 9 = 9 \cdot 3$
 25. $6 \cdot (2 \cdot 10) = (6 \cdot 2) \cdot 10$

Chapter 1 Whole Numbers

26. $(4 \cdot 15) \cdot 5 = 4 \cdot (15 \cdot 5)$

27. $5(7 + 4) = (5 \cdot 7) + (5 \cdot 4)$

28. $3(2 + 6) = (3 \cdot 2) + (3 \cdot 6)$

29.
$$\begin{array}{r} 24 \\ \times 6 \\ \hline 24 \\ + 120 \\ \hline 144 \end{array}$$
 Multiply 6×4 .
 Multiply 6×20 .
 Add.

30.
$$\begin{array}{r} 18 \\ \times 5 \\ \hline 40 \\ + 50 \\ \hline 90 \end{array}$$
 Multiply 5×8 .
 Multiply 5×10 .
 Add.

31.
$$\begin{array}{r} 26 \\ \times 2 \\ \hline 12 \\ + 40 \\ \hline 52 \end{array}$$
 Multiply 2×6 .
 Multiply 2×20 .
 Add.

32.
$$\begin{array}{r} 71 \\ \times 3 \\ \hline 3 \\ + 210 \\ \hline 213 \end{array}$$
 Multiply 3×1 .
 Multiply 3×70 .
 Add.

33.
$$\begin{array}{r} 131 \\ \times 5 \\ \hline 5 \\ 150 \\ + 500 \\ \hline 655 \end{array}$$
 Multiply 5×1 .
 Multiply 5×30 .
 Multiply 5×100 .
 Add.

34.
$$\begin{array}{r} 725 \\ \times 3 \\ \hline 15 \\ 60 \\ + 2100 \\ \hline 2175 \end{array}$$
 Multiply 3×5 .
 Multiply 3×20 .
 Multiply 3×700 .
 Add.

35.
$$\begin{array}{r} 344 \\ \times 4 \\ \hline 16 \\ 160 \\ + 1200 \\ \hline 1376 \end{array}$$
 Multiply 4×4 .
 Multiply 4×40 .
 Multiply 4×300 .
 Add.

36.
$$\begin{array}{r} 105 \\ \times 9 \\ \hline 45 \\ 00 \\ + 900 \\ \hline 945 \end{array}$$
 Multiply 9×5 .
 Multiply 9×0 .
 Multiply 9×100 .
 Add.

37.
$$\begin{array}{r} 3 \\ 1410 \\ \times 8 \\ \hline 11,280 \end{array}$$

38.
$$\begin{array}{r} 3 \\ 2016 \\ \times 6 \\ \hline 12,096 \end{array}$$

39.
$$\begin{array}{r} 21 \\ 3312 \\ \times 7 \\ \hline 23,184 \end{array}$$

40.
$$\begin{array}{r} 4 \\ 4801 \\ \times 5 \\ \hline 24,005 \end{array}$$

41.
$$\begin{array}{r} 113 \\ 42,014 \\ \times 9 \\ \hline 378,126 \end{array}$$

42.
$$\begin{array}{r} 4 \\ 51,006 \\ \times 8 \\ \hline 408,048 \end{array}$$

43.
$$\begin{array}{r} 32 \\ \times 14 \\ \hline 128 \\ + 320 \\ \hline 448 \end{array}$$

44.
$$\begin{array}{r} 41 \\ \times 21 \\ \hline 41 \\ + 820 \\ \hline 861 \end{array}$$

$$\begin{array}{r}
 45. \quad \begin{array}{r} 1 \\ 3 \\ 68 \\ \times 24 \\ \hline 1 \\ 272 \\ + 1360 \\ \hline 1632 \end{array}
 \end{array}$$

$$\begin{array}{r}
 46. \quad \begin{array}{r} 2 \\ 55 \\ \times 41 \\ \hline 55 \\ + 2200 \\ \hline 2255 \end{array}
 \end{array}$$

$$\begin{array}{r}
 47. \quad \begin{array}{r} 72 \\ \times 12 \\ \hline 144 \\ + 720 \\ \hline 864 \end{array}
 \end{array}$$

$$\begin{array}{r}
 48. \quad \begin{array}{r} 1 \\ 1 \\ 13 \\ \times 46 \\ \hline 78 \\ + 520 \\ \hline 598 \end{array}
 \end{array}$$

$$\begin{array}{r}
 49. \quad \begin{array}{r} 32 \\ 143 \\ \times 17 \\ \hline 1001 \\ + 1430 \\ \hline 2431 \end{array}
 \end{array}$$

$$\begin{array}{r}
 50. \quad \begin{array}{r} 11 \\ 722 \\ \times 28 \\ \hline 111 \\ 5776 \\ + 14440 \\ \hline 20,216 \end{array}
 \end{array}$$

$$\begin{array}{r}
 51. \quad \begin{array}{r} 48 \\ 349 \\ \times 19 \\ \hline 1 \\ 3141 \\ + 3490 \\ \hline 6631 \end{array}
 \end{array}$$

$$\begin{array}{r}
 52. \quad \begin{array}{r} 512 \\ \times 31 \\ \hline 512 \\ + 15360 \\ \hline 15,872 \end{array}
 \end{array}$$

$$\begin{array}{r}
 53. \quad \begin{array}{r} 1 \\ 3 \\ 151 \\ \times 127 \\ \hline 1057 \\ 3020 \\ + 15100 \\ \hline 19,177 \end{array}
 \end{array}$$

$$\begin{array}{r}
 54. \quad \begin{array}{r} 1 \\ 1 \\ 703 \\ \times 146 \\ \hline 14218 \\ 28120 \\ + 70300 \\ \hline 102,638 \end{array}
 \end{array}$$

$$\begin{array}{r}
 55. \quad \begin{array}{r} 11 \\ 222 \\ \times 841 \\ \hline 1 \\ 11222 \\ 8880 \\ + 177600 \\ \hline 186,702 \end{array}
 \end{array}$$

$$\begin{array}{r}
 56. \quad \begin{array}{r} 43 \\ 54 \\ 387 \\ \times 506 \\ \hline 2322 \\ 0000 \\ + 193500 \\ \hline 195,822 \end{array}
 \end{array}$$

$$\begin{array}{r}
 57. \quad \begin{array}{r} 311 \\ 21 \\ 3532 \\ \times 6014 \\ \hline 11 \\ 14128 \\ 35320 \\ 000000 \\ + 21192000 \\ \hline 21,241,448 \end{array}
 \end{array}$$

$$\begin{array}{r}
 2 \\
 7 \\
 58. \quad 2810 \\
 \times \quad 1039 \\
 \hline
 125290 \\
 84300 \\
 000000 \\
 + 2810000 \\
 \hline
 2,919,590
 \end{array}$$

$$\begin{array}{r}
 111 \\
 11 \\
 59. \quad 4122 \\
 \times \quad 982 \\
 \hline
 8244 \\
 329760 \\
 + 3709800 \\
 \hline
 4,047,804
 \end{array}$$

$$\begin{array}{r}
 13 \\
 1 \\
 60. \quad 24 \\
 7026 \\
 \times \quad 528 \\
 \hline
 56208 \\
 140520 \\
 + 3513000 \\
 \hline
 3,709,728
 \end{array}$$

$$\begin{array}{r}
 600 \rightarrow 6 \mid 00 \\
 \times 40 \rightarrow \times 4 \mid 0 \\
 \hline
 24 \mid 000 = 24,000
 \end{array}$$

$$\begin{array}{r}
 900 \rightarrow 9 \mid 00 \\
 \times 50 \rightarrow \times 5 \mid 0 \\
 \hline
 45 \mid 000 = 45,000
 \end{array}$$

$$\begin{array}{r}
 3000 \rightarrow 3 \mid 000 \\
 \times 700 \rightarrow \times 7 \mid 00 \\
 \hline
 21 \mid 00000 = 2,100,000
 \end{array}$$

$$\begin{array}{r}
 4000 \rightarrow 4 \mid 000 \\
 \times 400 \rightarrow \times 4 \mid 00 \\
 \hline
 16 \mid 00000 = 1,600,000
 \end{array}$$

$$\begin{array}{r}
 8000 \rightarrow 8 \mid 000 \\
 \times 9000 \rightarrow \times 9 \mid 000 \\
 \hline
 72 \mid 000000 = 72,000,000
 \end{array}$$

$$\begin{array}{r}
 1000 \rightarrow 1 \mid 000 \\
 \times 2000 \rightarrow \times 2 \mid 000 \\
 \hline
 2 \mid 000000 = 2,000,000
 \end{array}$$

$$\begin{array}{r}
 90,000 \rightarrow 9 \mid 0000 \\
 \times 400 \rightarrow \times 4 \mid 00 \\
 \hline
 36 \mid 000000 = 36,000,000
 \end{array}$$

$$\begin{array}{r}
 50,000 \rightarrow 5 \mid 0000 \\
 \times 6,000 \rightarrow \times 6 \mid 000 \\
 \hline
 30 \mid 0000000 = 300,000,000
 \end{array}$$

$$\begin{array}{r}
 11,784 \rightarrow 12,000 \\
 \times 5201 \rightarrow \times 5,000 \\
 \hline
 60,000,000
 \end{array}$$

$$\begin{array}{r}
 45,046 \rightarrow 45,000 \\
 \times 7812 \rightarrow \times 8,000 \\
 \hline
 360,000,000
 \end{array}$$

$$\begin{array}{r}
 82,941 \rightarrow 80,000 \\
 \times 29,740 \rightarrow \times 30,000 \\
 \hline
 2,400,000,000
 \end{array}$$

$$\begin{array}{r}
 630,229 \rightarrow 630,000 \\
 \times 71,907 \rightarrow \times 70,000 \\
 \hline
 44,100,000,000
 \end{array}$$

$$\begin{array}{r}
 \$189 \rightarrow \$200 \\
 \times 5 \quad \times 5 \\
 \hline
 \$1000
 \end{array}$$

$$\begin{array}{r}
 \$129 \rightarrow \$130 \\
 \times 28 \rightarrow \times 30 \\
 \hline
 \$3,900
 \end{array}$$

$$\begin{array}{r}
 10,256 \rightarrow 1 \mid 0000 \\
 \times \$137 \rightarrow \times 137 \mid 0000 \\
 \hline
 137 \mid 0000 = \$1,370,000
 \end{array}$$

$$\begin{array}{r}
 48 \rightarrow 5 \mid 0 \\
 \times 12 \rightarrow \times 1 \mid 0 \\
 \hline
 5 \mid 00
 \end{array}$$

$$\begin{array}{r}
 500 \\
 \times 7 \\
 \hline
 \$3500 \text{ per week}
 \end{array}$$

$$\begin{array}{r} 77. \quad 1000 \\ \times \quad 4 \\ \hline 4000 \end{array}$$

4000 minutes can be stored.

$$\begin{array}{r} 78. \quad 700 \\ \times \quad 15 \\ \hline 3500 \\ + 7000 \\ \hline 10,500 \end{array}$$

15 CD's hold 10,500 MB of data

$$\begin{array}{r} 79. \quad \frac{1}{3} \\ \quad \quad \$45 \\ \times \quad 37 \\ \hline \quad 315 \\ + 1350 \\ \hline \$1,665 \end{array}$$

$$\begin{array}{r} 80. \quad 1 \\ \quad \quad 55 \\ \times \quad 20 \\ \hline \quad 00 \\ + 1100 \\ \hline 1100 \end{array}$$

It can go 1100 miles on 20 gallons of gas.

$$\begin{array}{r} 81. \quad 12 \\ \times \quad 12 \\ \hline \quad 24 \\ + 120 \\ \hline 144 \end{array}$$

A case contains 144 fl oz.

$$\begin{array}{r} 82. \quad 1 \\ \quad \quad 16 \\ \times \quad 3 \\ \hline \quad 48 \end{array}$$

The class meets for 48 hours.

$$\begin{array}{r} 83. \quad \begin{array}{r} 2 \qquad 32 \\ 115 \qquad 575 \\ \times 5 \qquad \times 5 \end{array} \left| \begin{array}{r} 00 \\ 00 \end{array} \right. \\ \hline \begin{array}{r} 575 \\ 287,500 \end{array} \end{array}$$

287,500 sheets of paper are delivered.

$$\begin{array}{r} 84. \quad \begin{array}{r} 4 \\ 14 \qquad 28 \\ \times 2 \qquad \times 6 \\ \hline 28 \qquad 168 \end{array} \end{array}$$

She gets 168 g of protein.

$$\begin{array}{r} 85. \quad 31 \\ \times \quad 12 \\ \hline \quad 62 \\ + 310 \\ \hline 372 \end{array}$$

He can travel 372 miles.

$$\begin{array}{r} 86. \quad 23 \\ \times \quad 32 \\ \hline \quad 46 \\ + 690 \\ \hline 736 \end{array}$$

Sherica schedules 736 hr.

$$\begin{array}{l} 87. \quad A = l \times w \\ \quad \quad A = (23 \text{ ft}) \times (12 \text{ ft}) \\ \quad \quad \begin{array}{r} 23 \\ \times 12 \\ \hline \quad 46 \\ + 230 \\ \hline 276 \end{array} \end{array}$$

The area is 276 ft².

$$\begin{array}{l} 88. \quad A = l \times w \\ \quad \quad A = (31 \text{ m}) \times (2 \text{ m}) = 62 \text{ m}^2 \end{array}$$

$$\begin{array}{l} 89. \quad A = l \times w \\ \quad \quad A = (73 \text{ cm}) \times (73 \text{ cm}) \\ \quad \quad \begin{array}{r} 2 \\ 73 \\ \times 73 \\ \hline 219 \\ + 5110 \\ \hline 5329 \end{array} \end{array}$$

The area is 5329 cm².

$$\begin{array}{l} 90. \quad A = l \times w \\ \quad \quad A = (41 \text{ yd}) \times (41 \text{ yd}) \\ \quad \quad \begin{array}{r} 41 \\ \times 41 \\ \hline \quad 41 \\ + 1640 \\ \hline 1681 \end{array} \end{array}$$

The area is 1681 yd².

$$\begin{array}{l} 91. \quad A = l \times w \\ \quad \quad A = (390 \text{ mi}) \times (270 \text{ mi}) \end{array}$$

$$\begin{array}{r}
 1 \\
 6 \\
 390 \\
 \times 270 \\
 \hline
 000 \\
 27300 \\
 + 78000 \\
 \hline
 105,300
 \end{array}$$

The area is 105,300 mi².

92. $A = l \times w$
 $A = (130 \text{ yd}) \times (150 \text{ yd})$

$$\begin{array}{r}
 1 \\
 130 \\
 \times 150 \\
 \hline
 000 \\
 6500 \\
 + 13000 \\
 \hline
 19,500
 \end{array}$$

The area is 19,500 yd².

93. (a) $A = l \times w$
 $A = (40 \text{ in.}) \times (60 \text{ in.})$

$$\begin{array}{r}
 40 \\
 \times 60 \\
 \hline
 00 \\
 + 2400 \\
 \hline
 2400 \text{ in.}^2
 \end{array}$$

(b)
$$\begin{array}{r}
 1 \\
 14 \\
 \times 3 \\
 \hline
 42
 \end{array}$$

There are 42 windows.

(c)
$$\begin{array}{r}
 1 \\
 2400 \\
 \times 42 \\
 \hline
 4800 \\
 + 96000 \\
 \hline
 100,800
 \end{array}$$

The total area is 100,800 in.²

94. $A = l \times w$
 $A = (50 \text{ ft.}) \times (30 \text{ ft.})$

$$\begin{array}{r}
 8 \\
 50 \\
 \times 30 \\
 \hline
 000 \\
 + 1500 \\
 \hline
 1500
 \end{array}$$

The area is 1500 ft².

95. $A = l \times w$
 $A = (8 \text{ ft}) \times (16 \text{ ft})$

$$\begin{array}{r}
 4 \\
 16 \\
 \times 8 \\
 \hline
 128
 \end{array}$$

The area is 128 ft².

96. $A = l \times w$
 $A = (10 \text{ yd}) \times (15 \text{ yd}) = 150 \text{ yd}^2$

Section 1.6 Division of Whole Numbers

Section 1.6 Practice Exercises

- Answers will vary.
- (a) **Division** is the process of separating a number into equal groups.

(b) The **dividend** is the number being divided.

(c) The **divisor** is the number of groups.

(d) The **quotient** is the result of the division.

(e) **Long division** uses a series of estimates to find the quotient when dividing larger numbers.

Chapter 1 Whole Numbers

19. $15 \div 1 = 15$ because $15 \times 1 = 15$.

20. $21 \overline{)21} = 1$ because $1 \times 21 = 21$.

21. $0 \div 10 = 0$ because $0 \times 10 = 0$.

22. $\frac{0}{3} = 0$ because $0 \times 3 = 0$.

23. $0 \overline{)9}$ is undefined because division by zero is undefined.

24. $4 \div 0$ is undefined because division by zero is undefined.

25. $\frac{20}{20} = 1$ because $1 \times 20 = 20$.

26. $1 \overline{)9} = 9$ because $9 \times 1 = 9$.

27. $\frac{16}{0}$ is undefined because division by zero is undefined.

28. $\frac{5}{1} = 5$ because $5 \times 1 = 5$.

29. $8 \overline{)0} = 0$ because $0 \times 8 = 0$.

30. $13 \div 13 = 1$ because $13 \times 1 = 13$.

31. $6 \div 3 = 2$ because $2 \times 3 = 6$.
 $3 \div 6 \neq 2$ because $2 \times 6 \neq 3$.

32. $(36 \div 12) \div 3 = 3 \div 3 = 1$ but
 $36 \div (12 \div 3) = 36 \div 4 = 9$.

33. To check a division problem without a remainder you should multiply the quotient and the divisor to get the dividend.

34. To check $0 \div 5 = 0$ we multiply $0 \times 5 = 0$ which is true. If we try to check $5 \div 0 = ?$ we need to find a number to multiply by 0 to get 5. Since no such number exists, the answer to $5 \div 0$ is undefined.

$$\begin{array}{r} 13 \\ 6 \overline{)78} \\ \underline{-6} \\ 18 \\ \underline{-18} \\ 0 \end{array} \qquad \begin{array}{r} 1 \\ 13 \\ \times 6 \\ \hline 78 \checkmark \end{array}$$

$$\begin{array}{r} 52 \\ 7 \overline{)364} \\ \underline{-35} \\ 14 \\ \underline{-14} \\ 0 \end{array} \qquad \begin{array}{r} 1 \\ 52 \\ \times 7 \\ \hline 364 \checkmark \end{array}$$

$$\begin{array}{r} 41 \\ 5 \overline{)205} \\ \underline{-20} \\ 05 \\ \underline{-5} \\ 0 \end{array} \qquad \begin{array}{r} 41 \\ \times 5 \\ \hline 205 \checkmark \end{array}$$

$$\begin{array}{r} 19 \\ 8 \overline{)152} \\ \underline{-8} \\ 72 \\ \underline{-72} \\ 0 \end{array} \qquad \begin{array}{r} 7 \\ 19 \\ \times 8 \\ \hline 152 \checkmark \end{array}$$

$$\begin{array}{r} 486 \\ 2 \overline{)972} \\ \underline{-8} \\ 17 \\ \underline{-16} \\ 12 \\ \underline{-12} \\ 0 \end{array} \qquad \begin{array}{r} 11 \\ 486 \\ \times 2 \\ \hline 972 \checkmark \end{array}$$

$$\begin{array}{r} 97 \\ 6 \overline{)582} \\ \underline{-54} \\ 42 \\ \underline{-42} \\ 0 \end{array} \qquad \begin{array}{r} 4 \\ 97 \\ \times 6 \\ \hline 582 \checkmark \end{array}$$

Section 1.6 Division of Whole Numbers

$$41. \begin{array}{r} 409 \\ 3 \overline{) 1227} \\ \underline{-12} \\ 02 \\ \underline{-0} \\ 27 \\ \underline{-27} \\ 0 \end{array}$$

$$\begin{array}{r} 2 \\ 409 \\ \times 3 \\ \hline 1227 \end{array} \checkmark$$

$$46. \begin{array}{r} 517 \\ 7 \overline{) 3619} \\ \underline{-35} \\ 11 \\ \underline{-7} \\ 49 \\ \underline{-49} \\ 0 \end{array}$$

$$\begin{array}{r} 14 \\ 517 \\ \times 7 \\ \hline 3619 \end{array} \checkmark$$

$$42. \begin{array}{r} 59 \\ 4 \overline{) 236} \\ \underline{-20} \\ 36 \\ \underline{-36} \\ 0 \end{array}$$

$$\begin{array}{r} 3 \\ 59 \\ \times 4 \\ \hline 236 \end{array} \checkmark$$

$$47. \begin{array}{r} 2 \\ 56 \\ \times 4 \\ \hline 224 \end{array} \text{ correct}$$

$$48. \begin{array}{r} 1 \\ 82 \\ \times 7 \\ \hline 574 \end{array} \text{ correct}$$

$$43. \begin{array}{r} 203 \\ 5 \overline{) 1015} \\ \underline{-10} \\ 01 \\ \underline{-0} \\ 15 \\ \underline{-15} \\ 0 \end{array}$$

$$\begin{array}{r} 1 \\ 203 \\ \times 5 \\ \hline 1015 \end{array} \checkmark$$

$$49. \begin{array}{r} 1 \dot{z} \\ 253 \\ \times 3 \\ \hline 759 \end{array} \text{ incorrect}$$

$$\begin{array}{r} 253 \text{ R } 2 \\ 3 \overline{) 761} \\ \underline{-6} \\ 16 \\ \underline{-15} \\ 11 \\ \underline{-9} \\ 2 \end{array}$$

$$44. \begin{array}{r} 407 \\ 5 \overline{) 2035} \\ \underline{-20} \\ 03 \\ \underline{-0} \\ 35 \\ \underline{-35} \\ 0 \end{array}$$

$$\begin{array}{r} 3 \\ 407 \\ \times 5 \\ \hline 2035 \end{array} \checkmark$$

$$50. \begin{array}{r} 1 \dot{z} \\ 120 \\ \times 5 \\ \hline 600 \end{array} \text{ incorrect}$$

$$\begin{array}{r} 120 \text{ R } 4 \\ 5 \overline{) 604} \\ \underline{-5} \\ 10 \\ \underline{-10} \\ 04 \\ \underline{-0} \\ 4 \end{array}$$

$$45. \begin{array}{r} 822 \\ 6 \overline{) 4932} \\ \underline{-48} \\ 13 \\ \underline{-12} \\ 12 \\ \underline{-12} \\ 0 \end{array}$$

$$\begin{array}{r} 11 \\ 822 \\ \times 6 \\ \hline 4932 \end{array} \checkmark$$

$$51. \begin{array}{r} 12 \\ 113 \\ \times 9 \\ \hline 1017 \\ + 4 \text{ Add the remainder.} \\ \hline 1021 \end{array} \text{ Correct}$$

$$52. \begin{array}{r} 14 \\ 218 \\ \times 6 \\ \hline 1308 \\ + 3 \text{ Add the remainder.} \\ \hline 1311 \end{array} \text{ Correct}$$

Chapter 1 Whole Numbers

$$\begin{array}{r}
 53. \quad \begin{array}{r}
 ^4 \\
 25 \\
 \times 8 \\
 \hline
 200 \\
 + 6 \\
 \hline
 206 \text{ incorrect}
 \end{array}
 \end{array}$$

$$\begin{array}{r}
 ^{25} \text{ R } 3 \\
 8 \overline{) 203} \\
 \underline{-16} \\
 43 \\
 \underline{-40} \\
 3
 \end{array}$$

$$\begin{array}{r}
 60. \quad \begin{array}{r}
 ^{16} \text{ R } 1 \\
 3 \overline{) 49} \\
 \underline{-3} \\
 19 \\
 \underline{-18} \\
 1
 \end{array}
 \end{array}$$

$$\begin{array}{r}
 16 \times 3 + 1 = 48 + 1 \\
 = 49 \checkmark
 \end{array}$$

$$\begin{array}{r}
 54. \quad \begin{array}{r}
 ^{14} \\
 117 \\
 \times 7 \\
 \hline
 819 \\
 + 5 \\
 \hline
 824 \text{ incorrect}
 \end{array}
 \end{array}$$

$$\begin{array}{r}
 ^{117} \text{ R } 2 \\
 7 \overline{) 821} \\
 \underline{-7} \\
 12 \\
 \underline{-7} \\
 51 \\
 \underline{-49} \\
 2
 \end{array}$$

$$\begin{array}{r}
 61. \quad \begin{array}{r}
 ^{197} \text{ R } 2 \\
 3 \overline{) 593} \\
 \underline{-3} \\
 29 \\
 \underline{-27} \\
 23 \\
 \underline{-21} \\
 2
 \end{array}
 \end{array}$$

$$\begin{array}{r}
 197 \times 3 + 2 = 591 + 2 \\
 = 593 \checkmark
 \end{array}$$

$$\begin{array}{r}
 55. \quad \begin{array}{r}
 ^7 \text{ R } 5 \\
 8 \overline{) 61} \\
 \underline{-56} \\
 5
 \end{array}
 \end{array}$$

$$\begin{array}{r}
 7 \times 8 + 5 = 56 + 5 \\
 = 61 \checkmark
 \end{array}$$

$$\begin{array}{r}
 62. \quad \begin{array}{r}
 ^{200} \text{ R } 1 \\
 4 \overline{) 801} \\
 \underline{-8} \\
 00 \\
 \underline{-00} \\
 01 \\
 \underline{-00} \\
 1
 \end{array}
 \end{array}$$

$$\begin{array}{r}
 200 \times 4 + 1 = 800 + 1 \\
 = 801 \checkmark
 \end{array}$$

$$\begin{array}{r}
 56. \quad \begin{array}{r}
 ^{29} \text{ R } 2 \\
 3 \overline{) 89} \\
 \underline{-6} \\
 29 \\
 \underline{-27} \\
 2
 \end{array}
 \end{array}$$

$$\begin{array}{r}
 29 \times 3 + 2 = 87 + 2 \\
 = 89 \checkmark
 \end{array}$$

$$\begin{array}{r}
 63. \quad \begin{array}{r}
 ^{42} \text{ R } 4 \\
 9 \overline{) 382} \\
 \underline{-36} \\
 22 \\
 \underline{-18} \\
 4
 \end{array}
 \end{array}$$

$$\begin{array}{r}
 42 \times 9 + 4 = 378 + 4 \\
 = 382 \checkmark
 \end{array}$$

$$\begin{array}{r}
 57. \quad \begin{array}{r}
 ^{10} \text{ R } 2 \\
 9 \overline{) 92} \\
 \underline{-9} \\
 02
 \end{array}
 \end{array}$$

$$\begin{array}{r}
 10 \times 9 + 2 = 90 + 2 \\
 = 92 \checkmark
 \end{array}$$

$$\begin{array}{r}
 64. \quad \begin{array}{r}
 ^{53} \text{ R } 4 \\
 8 \overline{) 428} \\
 \underline{-40} \\
 28 \\
 \underline{-24} \\
 4
 \end{array}
 \end{array}$$

$$\begin{array}{r}
 53 \times 8 + 4 = 424 + 4 \\
 = 428 \checkmark
 \end{array}$$

$$\begin{array}{r}
 58. \quad \begin{array}{r}
 ^{14} \text{ R } 4 \\
 5 \overline{) 74} \\
 \underline{-5} \\
 24 \\
 \underline{-20} \\
 4
 \end{array}
 \end{array}$$

$$\begin{array}{r}
 14 \times 5 + 4 = 70 + 4 \\
 = 74 \checkmark
 \end{array}$$

$$\begin{array}{r}
 65. \quad \begin{array}{r}
 ^{1557} \text{ R } 1 \\
 2 \overline{) 3115} \\
 \underline{-2} \\
 11 \\
 \underline{-10} \\
 11 \\
 \underline{-10} \\
 15 \\
 \underline{-14} \\
 1
 \end{array}
 \end{array}$$

$$\begin{array}{r}
 111 \\
 1557 \\
 \times 2 \\
 \hline
 3114 \\
 + 1 \\
 \hline
 3115 \checkmark
 \end{array}$$

$$\begin{array}{r}
 59. \quad \begin{array}{r}
 ^{27} \text{ R } 1 \\
 2 \overline{) 55} \\
 \underline{-4} \\
 15 \\
 \underline{-14} \\
 1
 \end{array}
 \end{array}$$

$$\begin{array}{r}
 27 \times 2 + 1 = 54 + 1 \\
 = 55 \checkmark
 \end{array}$$

Section 1.6 Division of Whole Numbers

$$66. \begin{array}{r} 785 \text{ R } 5 \\ 6 \overline{) 4715} \\ \underline{-42} \\ 51 \\ \underline{-48} \\ 35 \\ \underline{-30} \\ 5 \end{array}$$

$$\begin{array}{r} 53 \\ 785 \\ \times 6 \\ \hline 4710 \\ + 5 \\ \hline 4715 \checkmark \end{array}$$

$$71. \begin{array}{r} 479 \text{ R } 9 \\ 19 \overline{) 9110} \\ \underline{-76} \\ 151 \\ \underline{-133} \\ 180 \\ \underline{-171} \\ 9 \end{array}$$

$$67. \begin{array}{r} 751 \text{ R } 6 \\ 8 \overline{) 6014} \\ \underline{-56} \\ 41 \\ \underline{-40} \\ 14 \\ \underline{-8} \\ 6 \end{array}$$

$$\begin{array}{r} 4 \\ 751 \\ \times 8 \\ \hline 6008 \\ + 6 \\ \hline 6014 \checkmark \end{array}$$

$$72. \begin{array}{r} 269 \text{ R } 8 \\ 13 \overline{) 3505} \\ \underline{-26} \\ 90 \\ \underline{-78} \\ 125 \\ \underline{-117} \\ 8 \end{array}$$

$$68. \begin{array}{r} 1287 \text{ R } 4 \\ 7 \overline{) 9013} \\ \underline{-7} \\ 20 \\ \underline{-14} \\ 61 \\ \underline{-56} \\ 53 \\ \underline{-49} \\ 4 \end{array}$$

$$\begin{array}{r} 264 \\ 1287 \\ \times 7 \\ \hline 9009 \\ + 4 \\ \hline 9013 \checkmark \end{array}$$

$$73. \begin{array}{r} 43 \text{ R } 19 \\ 24 \overline{) 1051} \\ \underline{-96} \\ 91 \\ \underline{-72} \\ 19 \end{array}$$

$$69. \begin{array}{r} 835 \text{ R } 2 \\ 6 \overline{) 5012} \\ \underline{-48} \\ 21 \\ \underline{-18} \\ 32 \\ \underline{-30} \\ 2 \end{array}$$

$$\begin{array}{r} 23 \\ 835 \\ \times 6 \\ \hline 5010 \\ + 2 \\ \hline 5012 \checkmark \end{array}$$

$$74. \begin{array}{r} 197 \text{ R } 27 \\ 41 \overline{) 8104} \\ \underline{-41} \\ 400 \\ \underline{-369} \\ 314 \\ \underline{-287} \\ 27 \end{array}$$

$$70. \begin{array}{r} 550 \text{ R } 1 \\ 2 \overline{) 1101} \\ \underline{-10} \\ 10 \\ \underline{-10} \\ 01 \\ \underline{00} \\ 1 \end{array}$$

$$\begin{array}{r} 1 \\ 550 \\ \times 2 \\ \hline 1100 \\ + 1 \\ \hline 1101 \checkmark \end{array}$$

$$75. \begin{array}{r} 308 \\ 26 \overline{) 8008} \\ \underline{-78} \\ 20 \\ \underline{-0} \\ 208 \\ \underline{-208} \\ 0 \end{array}$$

$$76. \begin{array}{r} 612 \\ 15 \overline{) 9180} \\ \underline{-90} \\ 18 \\ \underline{-15} \\ 30 \\ \underline{-30} \\ 0 \end{array}$$

$$77. \begin{array}{r} 1259 \text{ R } 26 \\ 54 \overline{) 68012} \\ \underline{-54} \\ 140 \\ \underline{-108} \\ 321 \\ \underline{-270} \\ 512 \\ \underline{-486} \\ 26 \end{array}$$

$$78. \begin{array}{r} 2628 \text{ R } 33 \\ 35 \overline{) 92,013} \\ \underline{-70} \\ 220 \\ \underline{-210} \\ 101 \\ \underline{-70} \\ 313 \\ \underline{-280} \\ 33 \end{array}$$

$$79. \begin{array}{r} 22 \\ 75 \overline{) 1650} \\ \underline{-150} \\ 150 \\ \underline{-150} \\ 0 \end{array}$$

$$80. \begin{array}{r} 41 \\ 89 \overline{) 3649} \\ \underline{-356} \\ 89 \\ \underline{-89} \\ 0 \end{array}$$

$$81. \begin{array}{r} 35 \text{ R } 1 \\ 520 \overline{) 18,201} \\ \underline{-1560} \\ 2601 \\ \underline{-2600} \\ 1 \end{array}$$

$$82. \begin{array}{r} 21 \text{ R } 20 \\ 298 \overline{) 6278} \\ \underline{-596} \\ 318 \\ \underline{-298} \\ 20 \end{array}$$

$$83. \begin{array}{r} 229 \text{ R } 96 \\ 304 \overline{) 69712} \\ \underline{-608} \\ 891 \\ \underline{-608} \\ 2832 \\ \underline{-2736} \\ 96 \end{array}$$

$$84. \begin{array}{r} 231 \text{ R } 56 \\ 221 \overline{) 51107} \\ \underline{-442} \\ 690 \\ \underline{-663} \\ 277 \\ \underline{-221} \\ 56 \end{array}$$

$$85. \begin{array}{r} 302 \\ 114 \overline{) 34428} \\ \underline{-342} \\ 22 \\ \underline{-00} \\ 228 \\ \underline{-228} \\ 0 \end{array}$$

$$86. \begin{array}{r} 209 \\ 421 \overline{) 87989} \\ \underline{-842} \\ 378 \\ \underline{-000} \\ 3789 \\ \underline{-3789} \\ 0 \end{array}$$

87. $497 \div 71 = 7$

$$\begin{array}{r} 7 \\ 71 \overline{) 497} \\ \underline{-497} \\ 0 \end{array}$$

88. $1890 \div 45 = 42$

$$\begin{array}{r} 42 \\ 45 \overline{) 1890} \\ \underline{-180} \\ 90 \\ \underline{-90} \\ 0 \end{array}$$

89. $877 \div 14 = 62 \text{ R } 9$

$$\begin{array}{r} 62 \text{ R } 9 \\ 14 \overline{) 877} \\ \underline{-84} \\ 37 \\ \underline{-28} \\ 9 \end{array}$$

90. $722 \div 53 = 13 \text{ R } 33$

$$\begin{array}{r} 13 \\ 53 \overline{) 722} \\ \underline{-53} \\ 192 \\ \underline{-159} \\ 33 \end{array}$$

91. $42 \div 6 = 7$

92. $108 \div 9 = 12$

$$\begin{array}{r} 12 \\ 9 \overline{) 108} \\ \underline{-9} \\ 18 \\ \underline{-18} \\ 0 \end{array}$$

93. $28 \overline{) 392}$ 14 classrooms

$$\begin{array}{r} 14 \\ 28 \overline{) 392} \\ \underline{-28} \\ 112 \\ \underline{-112} \\ 0 \end{array}$$

94. $8 \overline{) 120}$ 15 tables

$$\begin{array}{r} 15 \\ 8 \overline{) 120} \\ \underline{-8} \\ 40 \\ \underline{-40} \\ 0 \end{array}$$

95. $32 \overline{) 168}$ 5 R 8

$$\begin{array}{r} 5 \text{ R } 8 \\ 32 \overline{) 168} \\ \underline{-160} \\ 8 \end{array}$$

5 cases; 8 cans left over

96. $52 \overline{) 425}$ 8 R 9

$$\begin{array}{r} 8 \text{ R } 9 \\ 52 \overline{) 425} \\ \underline{-416} \\ 9 \end{array}$$

Yes; \$9 left over

97. $25 \overline{) 3000}$ 120

$$\begin{array}{r} 120 \\ 25 \overline{) 3000} \\ \underline{-25} \\ 50 \\ \underline{-50} \\ 0 \\ \underline{-0} \\ 0 \end{array}$$

There will be 120 classes of Beginning Algebra.

98. $8 \overline{) 84480}$ 10560

$$\begin{array}{r} 10560 \\ 8 \overline{) 84480} \\ \underline{-8} \\ 4 \\ \underline{-0} \\ 44 \\ \underline{-40} \\ 48 \\ \underline{-48} \\ 0 \\ \underline{-0} \\ 0 \end{array}$$

Each person will receive \$10,560.

99. $45 \overline{) 405}$ 9

$$\begin{array}{r} 9 \\ 45 \overline{) 405} \\ \underline{-405} \\ 0 \end{array}$$

There will be 9 gallons used.

Chapter 1 Whole Numbers

$$100. \begin{array}{r} 26 \\ 52 \overline{) 1352} \\ \underline{-104} \\ 312 \\ \underline{-312} \\ 0 \end{array}$$

The couple traveled for 26 hours.

$$101. 1200 \div 20 = 60$$

$$\begin{array}{r} 60 \\ 20 \overline{) 1200} \\ \underline{-120} \\ 00 \\ \underline{-0} \\ 0 \end{array}$$

Approximately 60 words per minute

$$102. 2800 \div 400$$

$$\begin{array}{r} 7 \\ 400 \overline{) 2800} \\ \underline{-2800} \\ 0 \end{array}$$

Approximately 7 tanks of gas

$$103. \begin{array}{r} 25 \\ 18 \overline{) 450} \\ \underline{-36} \\ 90 \\ \underline{-90} \\ 0 \end{array}$$

Yes, they can all attend if they sit in the second balcony.

$$104. \begin{array}{r} 3\,000 \\ 12 \overline{) 36,000} \\ \underline{-36} \\ 0 \end{array}$$

Teacher: \$3000

$$\begin{array}{r} 5\,000 \\ 12 \overline{) 60,000} \\ \underline{-60} \\ 0 \end{array}$$

Professor: \$5,000

$$\begin{array}{r} 10,000 \\ 12 \overline{) 120,000} \\ \underline{-12} \\ 0 \end{array}$$

CEO: \$10,000

$$\begin{array}{r} 4\,000 \\ 12 \overline{) 48,000} \\ \underline{-48} \\ 0 \end{array}$$

Programmer: \$4,000

$$105. \begin{array}{r} 21,000,000 \\ \times 365 \\ \hline 7,665,000,000 \text{ bbl} \end{array}$$