Answers

Chapter 1

Lesson 1.1 (Part 1)

1. 38,600 2. 80,240 3. 46,059
4. 20,012 5. 73,001 6. 13,513
7. seventy-three thousand, two hundred forty-six
8. eleven thousand, two hundred eighty
9. sixty thousand, fifty-four
10. nineteen thousand, seven hundred seven
11. fifty-five thousand, fifty-five
12. forty-eight thousand, three hundred
13. ninety thousand, nine hundred ninety
14. 69,500; 70,000
15. 62,000; 65,000
16. 57,000; 67,000
17. fifty; 8
18. thousand; 2
19. three; 6
20. forty; 0

Accept all possible answers for Q21 and Q22.

21. 86,037
22. 30,786
23. 30,678
24. 87,630
25. 30,678
26. 87,603
27. 40,529
28. 54,209
29. 20,459
30. 20,594
31. 94,205
32. 95,420

Lesson 1.1 (Part 2)

1. thousands 2. ones 3. ten thousands
4. tens 5. hundreds 6. 400
7. 5
8. 90,000
9. 80
10. 1,000
11. 4
12. 20
13. 7
14. 8
15. thousands
16. tens
17. 90,000
18. ones
19. 6,000
20. 7; 700
21. 3; 4
22. 7; 8; 6
23. ten thousands; thousands; hundreds; 8
24. 9 ten thousands; 8 hundreds; tens
25. 20,000; 300; 20
26. 7,000; 80
27. 2,000; 600; 30
28. 50,000; 6,000; 60
29. 90,000; 9,000; 800; 50
30. 89,346
31. 3,421

Lesson 1.2

1. $>$ 2. $<$ 3. $<$ 4. $>$
5. 26,653
6. 91,111
7. 91,111
8. 60,002
9. 61,253; 61,352; 61,532
10. 78,631; 78,061; 76,138
11. 76,250
12. 78,900
13. 56,500
14. 45,990
15. 32,120
16. 43,500
17. 22,800
18. 62,000
19. 31,080; 31,280
    Rule: Add 200.
20. 58,700; 60,200
    Rule: Add 1,500.
21. 65,120; 65,720
    Rule: Add 600 and then add 400.
22. 22,000; 26,000
    Rule: Multiply the difference between the last two numbers by 2. Then add the product to the last number.

Lesson 1.3

1. 58,030
2. 77,095
3. 86,043
4. 87,000
5. 57,839
6. 50,705
7. 56,609
8. 27,432
9. a. $35{,}775 - 6{,}380 = 29{,}395$
   There are 29,395 adults attending the concert.
   b. $29{,}395 + 35{,}775 = 65{,}170$
   There are 65,170 people altogether.
10. a. $2{,}000 - 850 - 260 = 890$
    There are 890 Size S T-shirts.
    b. $260 + 890 = 1{,}150$
    There are 1,150 Size M and Size S T-shirts altogether.

Put On Your Thinking Cap!

Strategy: Logical reasoning

1. 86,420
2. 400
3. 80,000

Thinking skill: Identifying patterns and relationships

Strategy: Look for patterns

4. 45; 56
5. 144; 121
6. 72; 98; 128
7. 6,650; 9,850
8. 5,900; 6,650

Strategy: Logical reasoning

9. 1,000
10. 9,999
11. 1,001
12. 9,999
13. 1,000
14. 9,998
15. 1,003
16. 9,995
17. 1,023
18. 9,870

Chapter 2

Lesson 2.1

1. 1,034; 1,000 or 900
2. 10,985; 11,000 or 10,000
3. 269; 200 or 300
4. 17,975; 18,000
5. 846; 900 or 600
6. 595; 500
7. 752; 800 or 400
8. 19; 20
9. 49; 50
10. 29; 30
11.

Item	Actual Cost	Rounded to the Nearest Hundred
microwave	$450	$500
toaster	$80	$100
oven	$70	$100
coffee machine	$150	$200

The microwave is about $500 when rounded to the nearest hundred dollars.

The toaster is about $100 when rounded to the nearest hundred dollars.

The oven is about $100 when rounded to the nearest hundred dollars.

The coffee machine is about $200 when rounded to the nearest hundred dollars.

$500 + $100 + $100 + $200 = $900; Yes

Lesson 2.2

1. Yes
2. No
3. Yes
4. No
5. Yes
6. Yes
7. No
8. Yes
9. 36; 18; 12; 9; 6; 1; 2; 3; 4; 6; 9; 12; 18; 36
10. 60; 30; 20; 15; 12; 10; 1; 2; 3; 4; 5; 6; 10; 12; 15; 20; 30; 60
11. 1; 2; 3; 4; 6; 12
12. 12
13. 84; 42; 28; 21; 14; 12; 1; 2; 3; 4; 6; 7; 12; 14; 21; 28; 42; 84
14. 72; 36; 24; 18; 12; 9; 1; 2; 3; 4; 6; 8; 9; 12; 18; 24; 36; 72
15. 1; 2; 3; 4; 6; 12
16. 12
17. 18; 24; 27; 30; 45
18. 18; 24; 30
19. 18; 24; 30
20. 19, 37, 47
21. 9, 15, 26, 33, 45
22. 11, 13, 17, 19, 23, 29
23. 21, 22, 24, 25, 26, 27, 28

Lesson 2.3

1. 40
2. 72
3. 72
4. 77
5. 70
6. 4; 8; 12; 16; 20; 24; 28; 32; 36; 40; 44; 48; 52; 56; 60; 64; 68; 72
7. 9; 18; 27; 36; 45; 54; 63; 72
8. 36; 72
9. 36
10. 6; 12; 18; 24; 30; 36; 42; 48
11. 8; 16; 24; 32; 40; 48; 56; 64
12. 24; 48
13. 24
14. 56
15. 36
16. 60
17. 60
18. 20; 48; 60; 72
19. 48; 72
20. 54; 72
21. 72

Lesson 2.4

1. 1,896
2. 9,872
3. 56
4. 350
5. 4,200
6. 14,000
7.

$$\begin{array}{r} 2,658 \\ \times \quad 7 \\ \hline 56 \\ 350 \\ 4,200 \\ 14,000 \\ \hline 18,606 \end{array}$$

8. 3,960
9. 3,592
10. 8,343
11. 4,965
12. 10,767
13. 16,068
14. 21,693
15. 34,741
16. 43,976
17. 33,852
18. 32; 160; 192; 192
19. 30; 150; 180; 180
20. 72; 360; 432; 432
21. 72; 360; 432; 432

Put On Your Thinking Cap!

1. Thinking skill: Deduction
   Strategy: Make a systematic list, Guess and check
   The factors of 24 are 1, 2, 3, 4, 6, 8, 12, and 24.
   The number is 12.
2. Thinking skill: Deduction
   Strategy: Guess and check
   968
3. Thinking skill: Deduction
   Strategy: Make a systematic list

Now (Multiples of 4)	4	8	12	16	20	24
Next Year	5	9	13	17	21	25

   Jane is 24 years old now.
   More than one answer is possible.
4. Thinking skill: Analyzing
   Strategy: Guess and check

Number of Bicycles	Number of Tricycles	Total Number of Wheels
8	8	16 + 24 = 40
9	7	18 + 21 = 39
10	6	20 + 18 = 38

   10 students are on bicycles.
5. Thinking skill: Deduction
   Strategy: Make a systematic list

Multiples of 7	7	14	21	28	35	42	49
+ 5	12	19	26	33	40	47	54

Multiples of 9	9	18	27	36	45
+ 6	15	24	33	42	51

   Michelle has 33 baseball cards.
   Thinking skill: Logical reasoning
   Strategy: Guess and check
6. 12 January
7. 17 January
8. Thinking skill: Sequencing
   Strategy: Make a systematic list

Adventure Books ($4)	Soft Toys ($6)	Games ($8)
✓ ✓ ✓ ✓ ✓		
✓ ✓ ✓		✓
✓ ✓	✓ ✓	
✓		✓ ✓
	✓ ✓	✓

   There are 5 different ways altogether.

Chapter 3

Lesson 3.1

1. 9; 60; 900; 969
2. 48; 320; 5,600; 5,968
3. 54; 720; 4,500; 5,274
4. 738
5. 1,500
6. 2,140
7. 3,222
8. 2,709
9. 4,473
10. 3,736
11. 2,352
12. 5,067
13. 4,383

Lesson 3.2

1. 480
2. 890
3. 4; 92; 920
4. 3; 105; 1,050
5. 5; 2,095; 20,950
6. 2; 1,254; 12,540
7. 6; 3,216; 32,160
8. 6; 3,888; 38,880
9. 609; 6,090
10. 672; 6,720
11. 2,848; 28,480
12. 2,403; 24,030
13. 90; 40; 90 × 40 = 3,600
14. 400; 50; 400 × 50 = 20,000
15.
$$\begin{array}{r} 37 \\ \times\ 45 \\ \hline 185 \\ 1480 \\ \hline 1665 \end{array}$$

16.
$$\begin{array}{r} 56 \\ \times\ 34 \\ \hline 224 \\ 1{,}680 \\ \hline 1{,}904 \end{array}$$

17.
$$\begin{array}{r} 63 \\ \times\ 29 \\ \hline 567 \\ 1{,}260 \\ \hline 1{,}827 \end{array}$$

18.
$$\begin{array}{r} 74 \\ \times\ 32 \\ \hline 148 \\ 2{,}220 \\ \hline 2{,}368 \end{array}$$

19. 7,448 20. 5,238 21. 10,556
22. 24,288 23. 11,760 24. 31,608
25. 63,124 26. 80,464

Lesson 3.3

1.
$$\begin{array}{r} 1 \\ 5\overline{)745} \\ 500 \\ \hline 245 \end{array} \qquad \begin{array}{r} 1 \\ 5\overline{)745} \\ 500 \\ \hline 245 \end{array}$$

$$\begin{array}{r} 14 \\ 5\overline{)745} \\ 500 \\ \hline 245 \\ 200 \\ \hline 45 \end{array} \qquad \begin{array}{r} 149 \\ 5\overline{)745} \\ 500 \\ \hline 245 \\ 200 \\ \hline 45 \\ 45 \\ \hline 0 \end{array}$$

2.
$$\begin{array}{r} 1 \\ 6\overline{)984} \\ 600 \\ \hline 384 \end{array} \qquad \begin{array}{r} 1 \\ 6\overline{)984} \\ 600 \\ \hline 384 \end{array}$$

$$\begin{array}{r} 16 \\ 6\overline{)984} \\ 600 \\ \hline 384 \\ 360 \\ \hline 24 \end{array} \qquad \begin{array}{r} 164 \\ 6\overline{)984} \\ 600 \\ \hline 384 \\ 360 \\ \hline 24 \\ 24 \\ \hline 0 \end{array}$$

3. 364 4. 245 5. 237 6. 186
7. 109 8. 139 9. 123 10. 106

Lesson 3.4

1. 64; 8; 800 2. 63; 7; 700
3. 9; 3; 3000 4. 80; 20
5. 400; 80 6. 7,500; 1,500
7. 6,600; 1,100 8. 1,263
9. 1,013 10. 284 11. 562
12. 497 13. 968
14. 249 R 5
    1,748 is about 1,400.
    1,400 ÷ 7 = 200
    The answer 249 R 5 is reasonable.
15. 967 R 3
    3,871 is about 3,600.
    3,600 ÷ 4 = 900
    The answer 967 R 3 is reasonable.
16. 376 R 6
    3,014 is about 3,200.
    3,200 ÷ 8 = 400
    The answer 376 R 6 is reasonable.
17. 279 R 7
    2,518 is about 2,700.
    2,700 ÷ 9 = 300
    The answer 279 R 7 is reasonable.

18. 605 R 8
5,453 is about 5,400.
5,400 ÷ 9 = 600
The answer 605 R 8 is reasonable.

19. 902 R 2
7,218 is about 7,200.
7,200 ÷ 8 = 900
The answer 902 R 2 is reasonable.

20. 928 R 3
6,499 is about 6,300.
6,300 ÷ 7 = 900
The answer 928 R 3 is reasonable.

21. 556 R 1
2,781 is about 3,000.
3,000 ÷ 5 = 600
The answer 556 R 1 is reasonable.

Lesson 3.5

1. a. 18 × 24 = 432
Sharon buys 432 cupcakes.
b. 432 ÷ 8 = 54
54 boxes are needed.

2. 35 × 42 = 1,470
1,470 − 120 = 1,350
There are 1,350 chairs in the room now.

3. $699 × 38 = $26,562
He collects $26,562.

4. 369 × 4 = 1,476
1,476 blueberry muffins are sold every day.

5. 1,899 × 7 = 13,293
It produces 13,293 toy cars in 7 days.

6. 3,440 ÷ 6 = 573 R 2
a. Each group has 573 beads.
b. 2 beads are left over.

7. 2,255 ÷ 6 = 375 R 5
a. Each post office receives 375 stamps.
b. 5 stamps are left over.

8. a. $56 × 39 = $2,184
A store has to pay $2,184.
b. $72 × 39 = $2,808
$2,808 − $2,184 = $624
The store makes a profit of $624 on the in-line skates.

9. $68 × 25 = $1,700
$1,700 + $68 = $1,768
Hannah and her mother gave $1,768 altogether to charity.

10. 2,400 − 52 = 2,348
2,348 ÷ 9 = 260 R 8
a. There are 260 oranges in each box.
b. 8 oranges are unpacked.

11. 475 × 4 = 1,900
1,900 + 475 = 2,375
2,375 people are at the theater altogether.

12. 15 × 37 = 555
555 − 20 = 535
535 fish are put into the aquarium.

13. $3,650 − $1,610 = $2,040
$2,040 ÷ 3 = $680
Mr. Joseph puts $680 aside for each of his other expenses.

14. 1,543 + 932 = 2,475
2,475 ÷ 9 = 275
There is 275 milliliters of orange juice in each glass.

15. Carlene — y
Sharon — $3y$
Jason — $(3y + 50)$
Altogether — $(7y + 50)$
They save $(7y + 50)$ altogether.

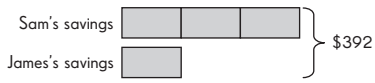
16. $(200 - w)$ chairs are arranged.
No. of rows — $\left(\frac{200 - w}{12}\right)$
There are $\left(\frac{200 - w}{12}\right)$ rows in the hall.

Put On Your Thinking Cap!

Thinking skill: Comparing
Strategy: Use a model

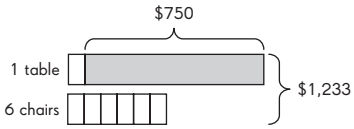
1. 275 × 3 = 825
275 + 825 = 1,100
1,100 − 156 = 944 beads
There are 944 beads left.

2. 420 − 90 = 330
420 + 330 = 750
750 × 28 = 21,000
The two factories produce 21,000 footballs in 28 days.

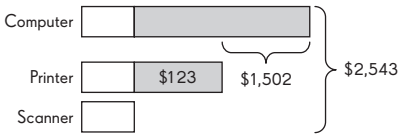
3. 

$392 ÷ 4 = $98
$98 × 3 = $294
$294 − $38 = $256
Sam has $256 now.

4. $89 × 6 = $534
$534 + $980 + $1,800 = $3,314
Mr. Roberts inherited $3,314.

5. 

$1,233 − $750 = $483
$483 ÷ 7 = $69
$69 × 6 = $414
Mrs. Rodin pays $414 for the 6 chairs.

6. 

$1,502 + $123 = $1,625
The computer costs $1,625 more than the scanner.
$2,543 − $1,625 − $123 = $795
$795 ÷ 3 = $265
$265 + $1,625 = $1,890
Ms. Rao pays $1,890 for the computer.

7. Thinking skill: Logical reasoning
Strategy: Guess and check
a. Greatest possible product:

$$\begin{array}{r} 872 \\ \times\ \ 94 \\ \hline 81,968 \end{array}$$

b. Least possible product:

$$\begin{array}{r} 489 \\ \times\ \ 27 \\ \hline 13,203 \end{array}$$

8. Strategy: Make a systematic list

Multiples of 7	21	28	35	42	49	56	63
+ 3	24	31	38	45	52	59	66

45 is a multiple of 5.
Mr. Garcia is 42 years old now.
42 + 6 = 48
In 6 years, Mr. Garcia will be 48 years old.

9. Thinking skill: Analyzing parts and whole
Strategy: Restate the problem

2 bicycles have 4 wheels.
39 − 4 = 35 wheels for the same number of bicycles and tricycles.
a. A bicycle and a tricycle have a total of 2 + 3 = 5 wheels
35 ÷ 5 = 7 tricycles
7 + 2 = 9 bicycles
The club buys 9 bicycles.
b. $49 × 9 = $441
The club pays $441 for the bicycles.

Chapter 4

Lesson 4.1

1. **Top Female Junior Sports Players**

Name	Basketball Points	Baseball Runs
Maria	88	59
Jade	110	64
Judith	121	60
Stacy	88	57

2. Jade; 64
3. Maria; Stacy
4. 7
5. **Living Things**

Snails	𝍸 ///
Worms	///
Ladybugs	𝍸 /
Butterflies	////

6. **Number of Living Things**

Snails	8
Worms	3
Ladybugs	6
Butterflies	4

7. 3
8. 10
9. worms; ladybugs
10. snails; butterflies or ladybugs; worms
11. **Bread Loaves Sold**

Whole grain bread	40
Raisin bread	55
Rye bread	30
Brown bread	40
White bread	65

12. 65 13. Whole grain; brown
14. White; whole grain; brown
15. Mystery books 16. Travel books
17. 80 + 30 + 20 + 50 + 60 = 240
18. 60 + 80 = 140 19. 20 + 30 = 50
20. 80 − 20 = 60

Lesson 4.2

1. B; 5 2. E; 5
3. A; 4 4. D; 1
5. Check that the correct cell is shaded.

Grade	Soccer	Badminton	Base-ball	Basket-ball
2	6	10	**12**	12
3	6	9	8	**17**
4	**9**	7	14	10
5	7	**16**	6	11
Total	28	42	40	50

6. Basketball 7. Soccer
8. 17 − 11 = 6 9. 42 students
10. 50 − 42 = 8 11. The second grade
12. 40 − 28 = 12

Lesson 4.3

1. June 2. March 3. April; May
4. Taylor's savings between January and June increased.
5. 9 A.M. 6. 12 P.M.
7. Between 9 A.M. and 11 A.M.;
   390 − 240 = 150 falafels
8. 50 9. 65
10. 7 A.M. and 8 A.M. 11. 3 hours
12. 55 patients 13. 70 patients
14. Between 3:30 P.M. and 4 P.M.; 25 patients
15. Between 6 P.M. and 7 P.M.; 25 patients

Put On Your Thinking Cap!

1. Bar graph. A bar graph is used to compare data using large numbers.
2. Line graph. A line graph is used to show how data changes over time.
3. Accept any correct answers.

Test Prep for Chapters 1 to 4

1. D 2. B 3. B 4. C
5. C 6. C 7. D 8. C
9. C 10. A
11. sixty-seven thousand, ninety-eight
12. 15 13. 1,500 14. 27,000
15. 26,388; 27,888 16. $139
17. 54 ft 18. $240 19. 42 20. $69
21. a. 460 meters
    b. Between 2 and 3 minutes
22. 1 adult and 2 children;
    $5 + $4 = $9
    1,080 ÷ 9 = 120
    120 adults are at the concert.
23. a. 2 + 11 = 13 students
    Since 11 more grapes are needed to give the students exactly 7 grapes each, adding 2 and 11 will give the exact number of students.
    Ms. Ervine has 13 students.
    b. 13 × 6 = 78
    78 + 2 = 80
    There are 80 grapes in the basket.

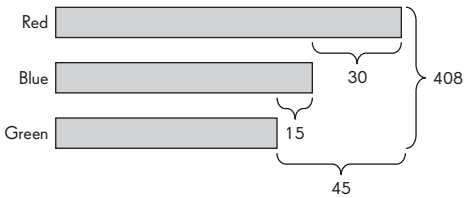
Chapter 5

Lesson 5.1

1. 12 + 10 + 8 + 14 = 44
2. 44 ÷ 4 = 11 3. 11
4. 26 in. + 28 in. + 30 in. + 32 in. + 34 in. = 150 in.
5. 150 ÷ 5 = 30 in. 6. 30
7. 172 8. 700
9. 810 10. 79
11. Total age = 15 + 12 + 16 + 17 = 60
    Average age = 60 ÷ 4 = 15 years
    Alisha's age is the same as the average age.
12. Jose and Matthew 13. Daniel
14. 150 × 3 = 450 cm
    145 × 2 = 290 cm
    450 + 290 = 740 cm
    740 ÷ 5 = 148 cm
    The mean height of the 5 students is 148 centimeters.

15. $1{,}896 \times 2 = 3{,}792$
$3{,}792 + 2{,}736 = 6{,}528$
$6{,}528 \div 3 = 2{,}176$
The average number of visitors is 2,176.

16. $136 \times 3 = 408$



$408 - 45 - 15 = 348$
$348 \div 3 = 116$
There are 116 green beanbags in the store.

17. $264 \div 3 = 88$
$88 + 1 = 89$ (Science)
$89 + 5 = 94$ (Math)
$89 + 94 = 183$
$264 - 183 = 81$ (English)
Joleen's score in English is 81.

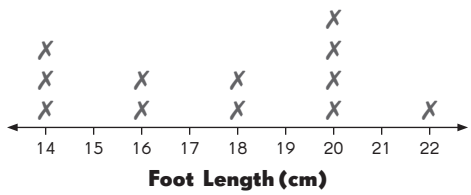
Lesson 5.2

1. 3, 4, 4, 5, 7, 9, 10
2. 5
3. 4
4. $10 - 3 = 7$
5. $\dfrac{3 + 4 + 4 + 5 + 7 + 9 + 10}{7} = \dfrac{42}{7} = 6$
6. 12 ft, 15 ft, 16 ft, 16 ft, 18 ft, 19 ft
7. 16 ft
8. 16 ft
9. $19 - 12 = 7$ ft
10. $\dfrac{12 + 15 + 16 + 16 + 18 + 19}{6}$
$= \dfrac{96}{6} = 16$ ft
11. 30 yd, 34 yd, 35 yd, 38 yd, 38 yd
12. 35 yd
13. 38 yd
14. $38 - 30 = 8$ yd
15. Mean $= \dfrac{30 + 34 + 35 + 38 + 38}{5}$
$= \dfrac{175}{5} = 35$ yd
16. $30 - 10 = 20$
17. 15
18. 20
19. $10 \times 1 = 10$
$15 \times 3 = 45$
$20 \times 2 = 40$
$25 \times 1 = 25$
$30 \times 2 = 60$
Total time $= 10 + 45 + 40 + 25 + 60$
$= 180$
Mean $= \dfrac{180}{9} = 20$

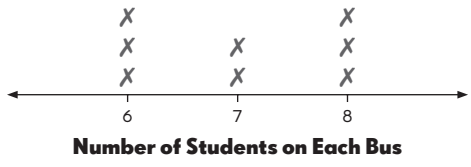
20. **Goals Scored**

Number of Goals	0	1	2	4	5	6
Number of Players	5	**9**	**6**	**3**	**5**	**2**

21. 30
22. 2
23. 1
24. $0 \times 5 = 0$
$1 \times 9 = 9$
$2 \times 6 = 12$
$4 \times 3 = 12$
$5 \times 5 = 25$
$6 \times 2 = 12$
$0 + 9 + 12 + 12 + 25 + 12 = 70$
25. 9
26. 24
27. 24
28. $25 - 20 = 5$
29. $20 \times 2 = 40$
$23 \times 2 = 46$
$24 \times 4 = 96$
$25 \times 1 = 25$
$40 + 46 + 96 + 25 = 207$
30. $207 \div 9 = 23$
31.



32. 12
33. 18
34. 20
35. 8
36.



37. 7
38. 6 and 8
39. 2
40. Total number of students $= 18 + 14 + 24$
$= 56$
Mean $= 56 \div 8 = 7$

Lesson 5.3

1. 35 2. 30 3. 31
4. 59 5. 45
6. $\frac{34 + 42}{2} = \frac{76}{2} = 38$
7. $59 - 24 = 35$ 8. 59
9. Total height $= 24 + 30 + 33 + 34 + 42 + 45 + 45 + 59 = 312$
   Mean $= \frac{312}{8} = 39$
10. \$275 11. \$275
12. $\$309 - \$205 = \$104$
13. \$205
14. Total $= \$205 + \$264 + \$268 + \$275 + \$275 + \$276 + \$284 + \$292 + \$309 = \$2,448$
    Mean $= \frac{\$2,448}{9} = \$272$
15.

Number of Dogs Walked	
Stem	**Leaves**
1	0
2	5 5 6 7 8 8
3	2 3

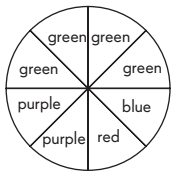
1 | 0 = 10

16. 25; 28 17. 27
18. $33 - 10 = 23$
19. Total $= 10 + 25 + 25 + 26 + 27 + 28 + 28 + 32 + 33 = 234$
    Average $= \frac{234}{9} = 26$
20. 7

Lesson 5.4

1. less likely 2. certain
3. more likely 4. impossible
5. certain 6. Answers vary.
7. impossible 8. certain
9. equally likely 10. certain
11. 2 12. 6
13. 8 14. less likely
15. impossible 16. equally likely
17. impossible

Lesson 5.5

1. a. 2 b. 6 c. $\frac{2}{6} = \frac{1}{3}$
2. $\frac{1}{6}$ 3. $\frac{3}{6} = \frac{1}{2}$
4. $\frac{4}{6} = \frac{2}{3}$ 5. $\frac{6}{6} = 1$
6. $\frac{1}{10}$; less likely 7. $\frac{2}{10} = \frac{1}{5}$; less likely
8. $\frac{3}{10}$; less likely 9. $\frac{9}{10}$; more likely
10. $\frac{5}{12}$ 11. $\frac{6}{12} = \frac{1}{2}$
12. $\frac{9}{12} = \frac{3}{4}$ 13. $\frac{6}{12} = \frac{1}{2}$
14. $\frac{9}{12} = \frac{3}{4}$ 15. $\frac{3}{12} = \frac{1}{4}$
16. 

17. $\frac{2}{8} = \frac{1}{4}$
18. $\frac{4}{8} = \frac{1}{2}$ 19. $\frac{2}{8} = \frac{1}{4}$
20. $\frac{0}{8} = 0$

Lesson 5.6

1. $4 \times 16 = 64$
   $20 + 8 = 28$
   $64 - 28 = 36$
   Tony and Miguel scored 36 points altogether.
2. $196 - 88 = 108$
   $\frac{108}{2} = 54$
   The mean weight of the other 2 dolphins is 54 pounds.
3. $A + D + C = 52 \times 3 = 156$
   $A + D = 61 \times 2 = 122$
   $D + C = 44 \times 2 = 88$
   $C = 156 - 122 = 34$ snacks (Calvin)
   $D = 88 - 34 = 54$ snacks (Dakota)
   $A = 156 - 88 = 68$ snacks (Adrian)
4. $100 \times 76 - 100 \times 70 = 600$
   $600 \div (80 - 70) = 60$ (boys)
   $100 - 60 = 40$ (girls)
   40 girls took the quiz.

5. **Number of Letters**

Name	Number of Letters
Jessica	7
Brenda	6
Carl	4
Fiona	5
Jeremy	6
Barry	5
Nicole	6
Zoe	3
Ann	3

a.

Number of Letters

b. 6 c. $7 - 3 = 4$

d. Mean

$$= \frac{3 + 3 + 4 + 5 + 5 + 6 + 6 + 6 + 7}{9}$$

$$= \frac{45}{9} = 5$$

e. This will change the range and mean since there are 9 letters in *Annemarie*.
Only the mode will remain constant.

6. 87

7. $\frac{81 + 87}{2} = \frac{168}{2} = 84$

8. $98 - 46 = 52$

9. $\frac{46 + 54 + 63 + 81 + 87 + 87 + 92 + 98}{8}$

$$= \frac{608}{8} = 76$$

10. $76 \times 9 = 684$
$684 - 608 = 76$
The new player scores 76.

11. Total number of students $= 20$

The probability of a girl leaving $= \frac{3}{5} = \frac{12}{20}$
There are 12 girls.

12. a. Total number of crayons $= 3 + 2 + 4 + 3$
$= 12$

The probability of drawing a yellow crayon
$= \frac{4}{12} = \frac{1}{3}$

b. Number of red and green crayons
$= 3 + 3 = 6$
The probability of drawing a red or green crayon $= \frac{6}{12} = \frac{1}{2}$

13. $\frac{\text{Number of buses}}{\text{Number of vehicles left}} = \frac{4}{19}$

14.

Total math and science score $= 74 \times 2 = 148$

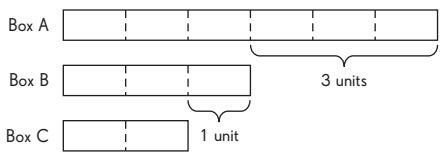
Total math and English score $= 83 \times 2 = 166$
$166 - 148 = 18$
She scored 18 more points in English than in science.

Put On Your Thinking Cap!

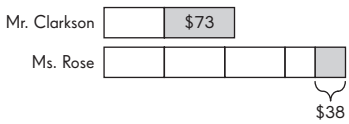
1. $147 \times 5 = 735$
$217 \times 2 = 434$
$735 + 434 = 1{,}169$
$1{,}169 \div 7 = 167$
He sells an average of 167 on newspapers on each day of the week.

2. $78 \times 3 = 234$
$82 \times 4 = 328$
$328 - 234 = 94$
She will need to score 94 points to have an average score of 82 points.

3. Thinking skill: Comparing
Strategy: Use a model

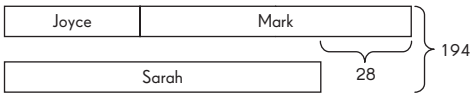


11 units → $88 \times 3 = 264$
1 unit → 24
$24 \times 6 = 144$
There are 144 paper clips in Box A.

4. 

5 units → $\$180 \times 2 + \$38 - \$73 = \$325$
1 unit → \$65
$\$65 + \$73 = \$138$
$\$65 \times 4 - \$38 = \$222$
Mr. Clarkson had \$138 and Ms. Rose had \$222 at first.

5. $68 \times 4 - 78 = 194$
Joyce, Mark, and Sarah have a total of 194 key chains.



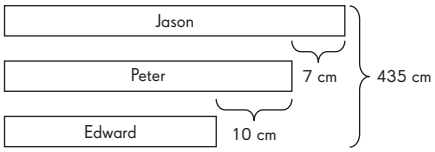
Sarah → $\frac{194 - 28}{2} = 83$

Joyce → $\frac{83 + 28}{3} = 37$

Mark → $37 \times 2 = 74$
Mark has 74 key chains.

6. With a difference of $(9 + 3) = 12$ points, the average score decreased by $(81 - 78) = 3$ points.
$12 \div 3 = 4$
There were 4 students in the group.

7. $145 \times 3 = 435$



$435 - 17 - 10 = 408$
$408 \div 3 = 136$ cm (Edward's height)
$136 + 10 = 146$ cm (Peter's height)
$146 + 7 = 153$ cm (Jason's height)

Chapter 6

Lesson 6.1

1. $\frac{1}{9} + \frac{6}{9} = \frac{7}{9}; \frac{6}{9}; \frac{6}{9}$
2. $\frac{3}{6} + \frac{1}{6} = \frac{4}{6} = \frac{2}{3}; \frac{3}{6}; \frac{3}{6}$
3. $\frac{4}{10} + \frac{1}{10} = \frac{5}{10} = \frac{1}{2}$
4. $\frac{8}{12} + \frac{2}{12} = \frac{10}{12} = \frac{5}{6}$
5. $\frac{3}{12} + \frac{1}{12} = \frac{4}{12} = \frac{1}{3}$
6. $\frac{7}{12}$ 7. $\frac{1}{2}$ 8. $\frac{2}{3}$
9. $\frac{7}{8}$ 10. $\frac{7}{9}$

Lesson 6.2

1. $\frac{5}{6} - \frac{3}{6} = \frac{2}{6} = \frac{1}{3}; \frac{3}{6}; \frac{3}{6}$
2. $\frac{7}{12} - \frac{4}{12} = \frac{3}{12} = \frac{1}{4}; \frac{4}{12}; \frac{4}{12}$
3. $\frac{9}{12} - \frac{5}{12} = \frac{4}{12} = \frac{1}{3}$
4. $\frac{8}{10} - \frac{3}{10} = \frac{5}{10} = \frac{1}{2}$
5. $\frac{2}{12}; \frac{1}{6}$ 6. $\frac{2}{16}; \frac{1}{8}$
7. $\frac{1}{2}$ 8. $\frac{1}{12}$ 9. $\frac{1}{10}$ 10. $\frac{1}{8}$

Lesson 6.3

1. $1\frac{5}{6}$ 2. $3\frac{3}{8}$
3. $2\frac{4}{7}$ 4. $5\frac{7}{9}$
5. 2; 3; $2\frac{3}{4}$ 6. 4; 5; $4\frac{5}{6}$
7. 3; 2; $3\frac{2}{3}$ 8. $1\frac{3}{5}$ L
9. $2\frac{1}{4}$ lb 10. $2\frac{3}{5}$
11. $4\frac{5}{8}$ 12. $3\frac{4}{9}$
13. $5\frac{7}{12}$ 14. $2\frac{1}{6}$
15. $4\frac{3}{10}$ 16. $2\frac{3}{4}$
17. $1\frac{2}{5}$ 18. $4\frac{1}{3}$
19. $3\frac{3}{4}$ 20. $\frac{2}{5}; 1\frac{1}{5}; 1\frac{4}{5}; 2\frac{3}{5}$
21. $\frac{1}{2}; \frac{7}{8}; 1\frac{3}{4}; 2\frac{1}{8}; 2\frac{3}{4}$ 22. $4\frac{1}{2}; 6\frac{1}{4}; 7\frac{1}{2}$
23. $5\frac{1}{2}; 6\frac{2}{3}; 7\frac{1}{6}; 7\frac{5}{6}$

Lesson 6.4

1. a. 7 b. 3 c. 10 d. $\frac{10}{7}$
2. a. 16 b. 3 c. 19 d. $\frac{19}{8}$
3. a. 9 b. 2 c. 11 d. $\frac{11}{3}$
4. $\frac{8}{5}$ 5. $\frac{14}{3}$
6. $\frac{13}{2}$ 7. $2\frac{3}{5}; \frac{13}{5}$
8. $1\frac{5}{6}; \frac{11}{6}$ 9. $3\frac{7}{8}; \frac{31}{8}$
10. $5\frac{3}{4}; \frac{23}{4}$ 11. $2\frac{4}{9}, \frac{22}{9}$
12. $2\frac{1}{5}, \frac{11}{5}$ 13. $2\frac{3}{10}, \frac{23}{10}$

14. $3\frac{5}{8}$; $\frac{29}{8}$

15. $\frac{7}{4}$; $\frac{9}{4}$; $\frac{11}{4}$; <

16. $\frac{5}{3}$; $\frac{7}{3}$; $\frac{8}{3}$; >

17. $\frac{8}{7}$; $\frac{12}{7}$; $\frac{17}{7}$; >

18. $\frac{11}{3}$; $\frac{13}{3}$; $\frac{29}{6}$; <

19. $\frac{9}{4}$; $\frac{11}{4}$; $\frac{15}{4}$; <

20. $\frac{21}{5}$; $\frac{26}{5}$; $\frac{29}{5}$; >

21. $\frac{18}{5}$; $\frac{21}{5}$; $\frac{24}{5}$; >

22. $\frac{17}{15}$; $\frac{9}{5}$; $\frac{7}{3}$; <

Lesson 6.5

1. 1; 1

2. 2; 2

3. 12; 1; 1; 1

4. 20; 3; 3; 3

5. 20; 7; 2; 7; $2\frac{7}{10}$

6. 21; 5; 3; 5; $3\frac{5}{7}$

7. 4; $2\frac{2}{3}$

8. 4; $2\frac{1}{2}$

9. $7\frac{1}{2}$

10. $1\frac{4}{5}$

11. $2\frac{1}{3}$

12. $1\frac{1}{4}$

13. $3\frac{1}{7}$

14. 6

15. $7\frac{1}{2}$

16. $8\frac{2}{5}$

17. $2\frac{2}{13}$

18. $3\frac{1}{5}$

19. 9; 11

20. 4; 5

21. 10; 13

22. 12; 17

23. 14; 4; 18

24. 18; 2; 20

25. $\frac{13}{3}$

26. $\frac{23}{10}$

27. $\frac{9}{7}$

28. $\frac{14}{9}$

29. $\frac{9}{4}$

30. $\frac{29}{12}$

31. $\frac{13}{10}$

32. $\frac{13}{11}$

33. $\frac{29}{5}$

34. $\frac{35}{9}$

35. $\frac{31}{5}$

36. $\frac{51}{7}$

Lesson 6.6

1. $1\frac{2}{9}$

2. $1\frac{2}{3}$

3. $1\frac{3}{8}$

4. $\frac{5}{6}$

5. $1\frac{1}{2}$

6. $1\frac{1}{12}$

7. $1\frac{5}{12}$

8. $1\frac{1}{2}$

9. $1\frac{7}{12}$

10. $1\frac{5}{8}$

11. $2\frac{5}{12}$

12. $3\frac{1}{9}$

13. $1\frac{1}{5}$

14. $4\frac{1}{3}$

15. $2\frac{1}{2}$

16. $3\frac{1}{4}$

17. $5\frac{3}{10}$

18. $2\frac{5}{14}$

19. $1\frac{5}{12}$

20. $4\frac{1}{9}$

Lesson 6.7

1. $\frac{2}{3}$

2. $\frac{3}{5}$

3. $\frac{1}{3}$

4. $\frac{1}{3}$

5. 30, 6, 24, 24

6. 40

7. 25

8. 30

9. 16

10. 10

11. 12

12. 50

13. 27

14. 35

15. 24

Lesson 6.8

1. $90 - 40 - 20 = 30$

   $\frac{30}{90} = \frac{1}{3}$

   Arthur is left with $\frac{1}{3}$ of his money.

2. $1 - \frac{3}{4} = \frac{1}{4}$

   $\frac{1}{4} \times 20 = 5$

   The baker is left with 5 pounds of sugar.

3. a. $\frac{6}{10} = \frac{3}{5}$ of the fish are goldfish.

   b. Total number of fish $= 10 + 2 = 12$

   $\frac{4}{12} = \frac{1}{3}$ of the fish are angelfish.

4. $\frac{3}{10} + \frac{2}{5} = \frac{7}{10}$

   $\frac{7}{10}$ of her savings is spent.

5. $\frac{1}{2} + \frac{1}{8} = \frac{5}{8}$

   $1 - \frac{5}{8} = \frac{3}{8}$

   $\frac{3}{8}$ of the vehicles are neither cars nor motorcycles.

6. $6 + \frac{3}{10} = 6\frac{3}{10}$ meters

   Rajon's plant grows $6\frac{3}{10}$ meters high.

7. $\frac{2}{5}$ of $10 = 4$

   $\frac{1}{3} \times 4 = \frac{4}{3} = 1\frac{1}{3}$

   4 packets of turkey ham weigh $1\frac{1}{3}$ pounds.

8. $\frac{6}{4} \times 12 = 18$

   $\frac{1}{2} \times 18 = 9$

   Carla spends 9 hours lifting weights during the 12 days.

Lesson 6.9

1. $\frac{1}{8}$ $\frac{1}{4}$ $\frac{5}{8}$ $\frac{3}{4}$ $\frac{7}{8}$

2. any possible answer

3. any possible answer

4. any possible answer

5. any possible answer

6. $\frac{1}{5}$ $\frac{3}{10}$ $\frac{4}{5}$ $\frac{9}{10}$

7. any possible answer

8. any possible answer

9. any possible answer

10. any possible answer

11. $\frac{1}{6}$ $\frac{1}{4}$ $\frac{5}{12}$ $\frac{7}{12}$ $\frac{2}{3}$ $\frac{5}{6}$

12. any possible answer

13. any possible answer

14. any possible answer

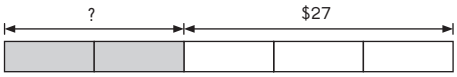
15. any possible answer

Put On Your Thinking Cap!

Thinking skill: Analyzing parts and whole

Strategy: Use a model

1.



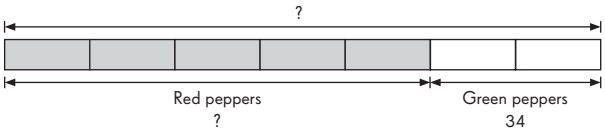
3 units → $27

1 unit → $27 ÷ 3 = $9

2 units → $9 × 2 = $18

Justin pays $18 for the shirt.

2.



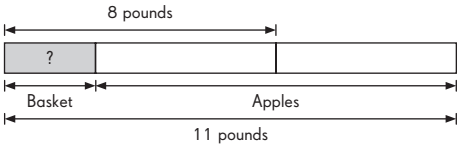
2 units → 34

1 unit → 34 ÷ 2 = 17

7 units → 17 × 7 = 119

The chef has 119 peppers altogether.

3.



1 unit of apples → 11 − 8 = 3

8 − 3 = 5

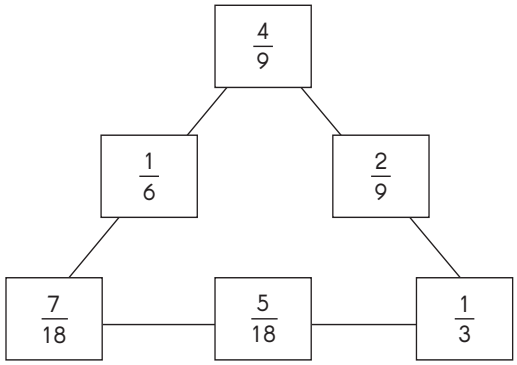
The weight of the empty basket is 5 pounds.

4. Thinking skill: Analyzing parts and whole

Strategy: Guess and check

Answers vary.

One possible answer:



Mid-Year Test

1. C	2. D	3. B	4. C
5. B	6. B	7. C	8. D
9. D	10. A	11. B	12. D
13. B		14. C	
15. B		16. A	
17. D		18. C	
19. B		20. C	
21. 1		22. 371	
23. 10,283		24. 69; 138	
25. $\frac{1}{2}$		26. 27 cm; 156 cm	
27. $\frac{2}{3}$	28. 4 ft.	29. 19,256	
30. 66,150	31. 78	32. 1,549	
33. Saturday		34. 5,800	
35. 900 − 800 = 100			
36. $1\frac{1}{6}$ liters		37. $\frac{4}{9}$	

38. 3 units → 1,482

1 unit → 494

5 units → 494 × 5 = 2,470

There are 2,470 students in the school.

39. 200 + 100 = 300

Sakina and Alisha receive 300 tacos altogether.

40. $0.50 + $0.50 + $1 = $2

$36 ÷ $2 = 18

18 × 2 = 36

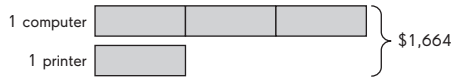
There are 36 50¢ coins in the bag.

41. 920 − 580 = 340

340 ÷ 2 = 170

170 plums are transferred from Basket A to Basket B.

42. $3,328 ÷ 2 = $1,664



$1,664 ÷ 4 = $416

a. Each printer costs $416.
$1,664 − $416 = $1,248

b. Each computer costs $1,248.

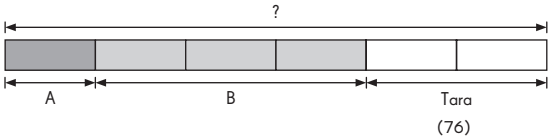
43. $\frac{8}{9} \times 1{,}080 = 960$

960 ÷ 10 = 96

96 × $2 = $192

Mr. Carlos collects $192 from the sale of apple.

44.



2 units ⟶ 76

1 unit ⟶ 76 ÷ 2 = 38

6 units ⟶ 38 × 6 = 228

They collected 228 seashells in all.

45. 45 − 9 = 36

$\frac{36}{3} \times 4 = 48$

48 − 8 = 40

$\frac{40}{2} \times 3 = 60$

60 passengers started the trip from the first bus stop.