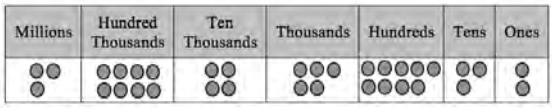
Answer Key

Chapter 1

1a

1



2 3,000,000 + 800,000 + 40,000 + 5,000 + 900 + 30 + 2;
Three million, eight hundred forty-five thousand, nine hundred thirty-two

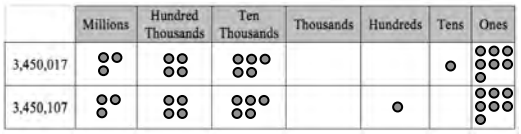
1b

1
8 hundred thousands = 800,000
9 ten thousands = 90,000
2 thousands = 2,000
0 hundreds = 0
1 ten = 10
6 ones = 6

2 7,000,000 + 800,000 + 90,000 + 2,000 + 10 + 6

3 Seven million, eight hundred ninety-two thousand, sixteen

1c



3,450,017 < 3,450,107

1d

1 2,567,009 2,567,001 2,367,101 2,367,001 2,307,989 2,307,981

2 Answers will vary

1e

1 840,900 940,900;
The numbers are increasing by 100,000.

2 2,060,100 2,050,100;
The numbers are decreasing by 10,000.

3 61,800 62,700;
The numbers are increasing by 900.

1f

1 545,480 546,580;
The numbers are increasing by 1,100.

2 80,202 56,182;
The numbers are decreasing by 12,010.

3 Answers will vary

4 Answers will vary

1g

1 15,000 – 12,000; 3,000

2 105,000 + 234,000; 339,000

3 13,000 × 5,000; 65,000,000

4 48,000 ÷ 8,000; 6

5 904,000 × 1,000; 904,000,000

1h

1 $250, $500, $1,000, $2,000, $4,000, $8,000, $16,000, $32,000, $64,000, $128,000, $256,000, $512,000, $1,024,000

2 13th

3 $1,024,000

1i

Answers will vary

Chapter 2

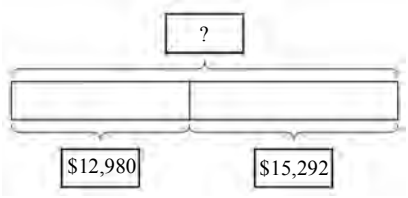
2a

1 3
2 6
3 18
4 1
5 2
6 2
7 80
8 45
9 48
10 6
11 5
12 6
13 21
14 32
15 63
16 9
17 10
18 7

Answer Key

2b

1 $28,272



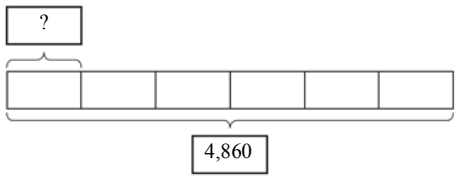
2 No, Jacqueline needs $272 more.

3 $3,200

4 7 months

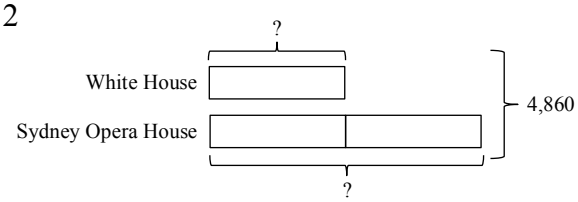
2c

1



Number of bricks in each bag
= 4,860 ÷ 6
= 810
There were 810 bricks in each bag.

2



Number of bricks Mark used for the White House
= 4,860 ÷ 3
= 1,620
Number of bricks Mark used for the Sydney Opera House
= 2 × 1,620
= 3,240
Mark used 1,620 bricks for the White House, and 3,240 bricks for the Sydney Opera House.

2d

1

	Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
5,120				5	1	2	0
5,120 × 10			5	1	2	0	0
5,120 × 100		5	1	2	0	0	0
5,120 ×1,000	5	1	2	0	0	0	0

2 4,920; 49,200; 492,000

3 40,920; 409,200; 4,092,000

2e

1 $6 \times 800 = (6 \times 8) \times 100$
$= \underline{48} \times 100$
$= \underline{4,800}$
So, $6 \times 800 = \underline{4,800}$

2 $9 \times 700 = (9 \times 7) \times \underline{100}$
$= \underline{63} \times \underline{100}$
$= \underline{6,300}$
So, $9 \times 700 = \underline{6,300}$

3 $50 \times 200 = (50 \times 2) \times \underline{100}$
$= \underline{100} \times \underline{100}$
$= \underline{10,000}$
So, $50 \times 200 = \underline{10,000}$

2f

1 80,045 pennies

2 $805.80

3 40,200 pennies

4 $402

5 Total amount raised
= $805.80 + $402 + $800.45
= $2,008.25
Number of paperback books
= $2,008.25 ÷ $10
= 200.825
The fifth-grade classes can buy 200 paperback books altogether.

2g

1 $5 \times 10^2 = 5 \times (10 \times 10)$
$= 5 \times 100$
$= \underline{500}$

2 $8 \times 10^3 = 8 \times (10 \times 10 \times 10)$
$= 8 \times 1,000$
$= \underline{8,000}$

3 $45 \times 10^2 = \underline{45} \times (10 \times 10)$
$= \underline{45} \times 100$
$= \underline{4,500}$

4 $87 \times 10^3 = \underline{87} \times (10 \times 10 \times 10)$
$= \underline{87} \times 1,000$
$= \underline{87,000}$

5 $72 \times 10^2 = \underline{72} \times (\underline{10} \times \underline{10})$
$= \underline{72} \times 100$
$= \underline{7,200}$

6 $90 \times 10^3 = \underline{90} \times (\underline{10} \times \underline{10} \times \underline{10})$
$= \underline{90} \times \underline{1,000}$
$= \underline{90,000}$

7 700

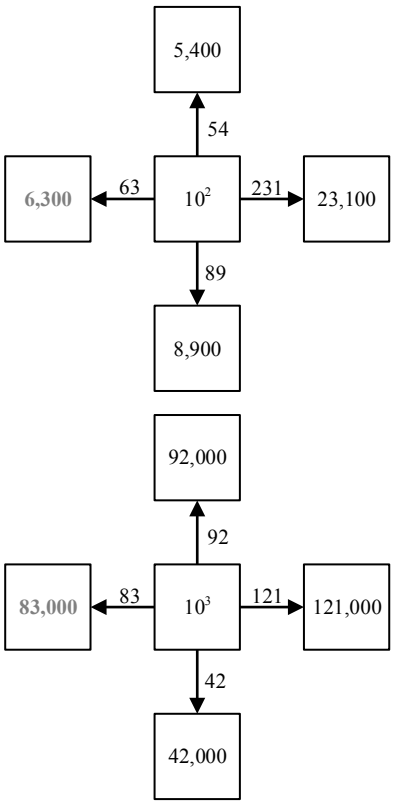
8 9,300

9 8,000

10 84,000

Answer Key

2h



2i

Day	1	2	3	4	5	6	7
People who told the story	1	10	100	1,000	10,000	100,000	1,000,000
People who heard the story	10	10^2	10^3	10^4	10^5	10^6	10^7

1 4

2 7

3

Day	1	2	3	4	5	6	7
People who told the story	1	2	20	200	2,000	20,000	200,000
People who heard the story	2	20	200	2,000	20,000	200,000	2,000,000

There will only be 200,000 people telling the story instead of 1,000,000 people.
There will only be 2,000,000 people hearing the story instead of 10^7 (or 10,000,000) people.

2j

1 $32 \times 81 = (32 \times 80) + (32 \times 1)$
$= \underline{2,560} + \underline{32}$
$= \underline{2,592}$

2 $64 \times 38 = (64 \times 30) + (64 \times 8)$
$= \underline{1,920} + \underline{512}$
$= \underline{2,432}$

3 1,888

4 3,645

2k

1 884

2 559

3 2,322

4 6,561

5 1,104

6 1,943

2l

1

	÷ 6	÷ 60	÷ 4	÷ 40
360	60	6	90	9
120	20	2	30	3
480	80	8	120	12
2,400	400	40	600	60

2 50; 5; 500

3 7; 70; 7

4 Number of yards Sahil walks each day
= 7,500 ÷ 5
= 1,500
Number of yards Sahil walks each way
= 1,500 ÷ 2
= 750
Sahil walks 750 yd each way.

5 Number of days
= 1,000,000 ÷ 10,000
= 100
Maria will take 100 days.

2m

1

	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
160,000	1	6	0	0	0	0
160,000 ÷ 10		1	6	0	0	0
160,000 ÷ 100			1	6	0	0
160,000 ÷ 1,000				1	6	0

2 Answers will vary

2n

1 2

2 2 R 1

3 1 R 11

2o

1 1 R 16

2 3

3 3 R 24

4 20 R 20

5 30 R 21

6 70 R 6
7 Number of pages Charity will need
= 65 ÷ 12
= 5 R 5
Charity will need 6 pages.

2p

1 14
2 0
3 109
4 154
5 1
6 10

2q

1 3 + 2 × 5 = 13
2 4 × 3 + 9 = 21
3 29 + 10 × 20 = 229
4 18 ÷ 6 + 7 = 10
5 (4 + 3) × 2 = 14
6 (3 ÷ 3) × 6 = 6
7 (5 × 2) + (4 × 1) = 14
8 3 × (2 + 5) × 2 = 42
9 (3 + 4) × (2 + 3) ÷ 5 = 7

2r

1 (9 + 16) ÷ 5 = 5
Each friend got 5 pieces of sea glass.
2a (32 ÷ 8) + 5 = 9
There were 9 shells in each bag in the end.
2b 9 × 8 = 72, or
32 + (5 × 8) = 72
Devin had 72 shells in all.

2s

1 Answers will vary
2 Answers will vary
3 Answers will vary

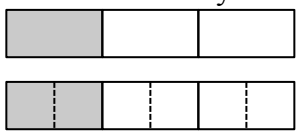
Chapter 3

3a

1 12
2 48
3 64
4 4
5 5
6 3
7 14
8 24
9 72
10 5
11 6
12 0
13 18
14 32
15 8
16 10
17 8
18 3
19 10
20 60
21 54

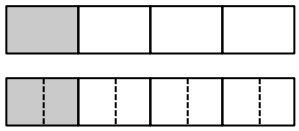
3b

1 Answers will vary. Sample:



$\frac{1}{3} = \frac{2}{6}$

2 Answers will vary. Sample:



$\frac{1}{4} = \frac{2}{8}$

3 9
4 16
5 10
6 45
7 6
8 18

3c

1 Equivalent: $\frac{3}{5}, \frac{6}{10}, \frac{9}{15}, \frac{12}{20}$
Simplest form: $\frac{3}{5}$

2 Equivalent: $\frac{8}{56}, \frac{1}{7}, \frac{3}{21}$
Simplest form: $\frac{1}{7}$

Answer Key

3 Equivalent: $\frac{10}{100}, \frac{1}{10}, \frac{3}{30}$

Simplest form: $\frac{1}{10}$

4 Equivalent: $\frac{33}{11}, \frac{9}{3}, 3, \frac{12}{4}$

Simplest form: 3

5 Equivalent: $\frac{5}{2}, \frac{10}{4}, 2\frac{1}{2}, \frac{20}{8}$

Simplest form: $2\frac{1}{2}$

3d

1 $\frac{5}{8}$

2 $\frac{1}{2}$

3 $\frac{5}{7}$

4 $\frac{7}{12}$

5 $\frac{3}{40}$

6 $\frac{13}{15}$

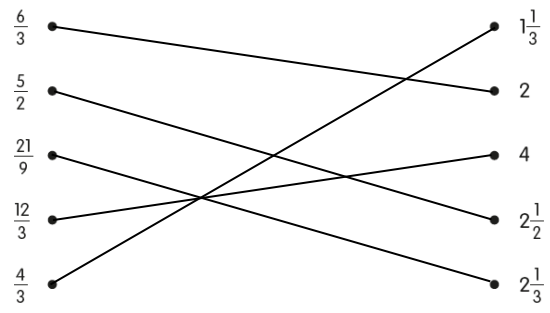
7 $\frac{29}{35}$

8 $\frac{3}{20}$

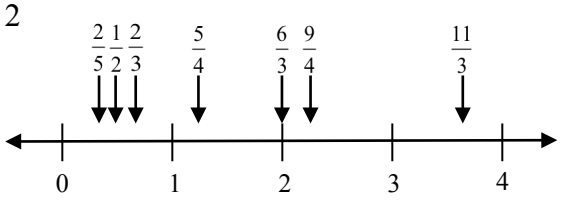
9 $\frac{1}{18}$

3e

1



2



3f

1 0.3

2 2.04

3 0.1

4 0.4

5 0.28

6 0.02

7 5.01

8 1.75

9 0.25

3g

1 0.6

2 0.25

3 4.5

4 3.15

5 2.5

6 4.75

7 $\frac{49}{100}$

8 $\frac{7}{20}$

9 $\frac{4}{5}$

10 $4\frac{1}{2}$

11 $5\frac{6}{25}$

12 $3\frac{43}{100}$

3h

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

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

3 $2\frac{1}{5}$

4 $5\frac{3}{4}$

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

6 $2\frac{3}{5}$

3i

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

2 $9\frac{4}{5}$

3 $5\frac{5}{6}$

4 $2\frac{1}{6}$

5 $5\frac{9}{56}$

6 $1\frac{1}{2}$

7 $1\frac{4}{5}$

8 $7\frac{1}{4}$

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

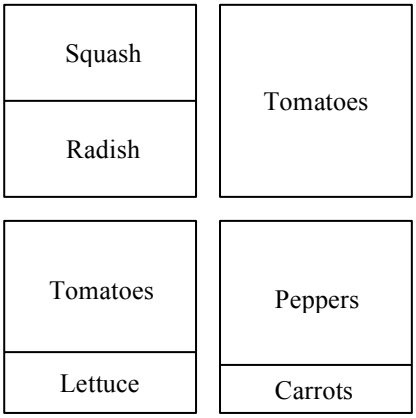
10 $4\frac{8}{15}$

3j

1 $\frac{9}{12}=\frac{3}{4}$ $1\frac{4}{6}=1\frac{2}{3}$

$\frac{4}{12}=\frac{1}{3}$

Answers will vary. Sample:



2 Space the squash and lettuce filled

$= \frac{1}{2}+\frac{1}{3}$

$= \frac{5}{6}$ of a plot

The squash and lettuce filled $\frac{5}{6}$ of a plot.

3 Squash + Radish + Peppers + Carrots, or
Tomatoes + Lettuce

3k

1 Answers will vary

2 Answers will vary

3 Answers will vary

Chapter 4

4a

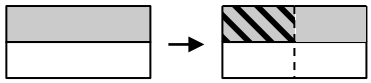
1 24

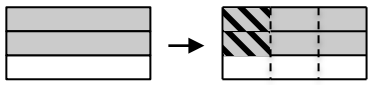
2 5

3a 1,500

3b Number of days
= 1,500 ÷ 10
= 150
Number of school days in a week = 5
Number of weeks
= 150 ÷ 5
= 30
The cleaning wipes would last 30 weeks.

4b

1 $\frac{1}{4}$ 

2 $\frac{2}{9}$ 

3 $\frac{1}{5}$

4 $\frac{3}{16}$

5 $\frac{6}{35}$

4c

1 $\frac{1}{12}$

2 $\frac{1}{3}$

3 $\frac{3}{8}$

4 $\frac{3}{10}$

5 $\frac{6}{25}$

6 $\frac{1}{7}$

Answer Key

7 $\frac{1}{8}$

8 $\frac{2}{21}$

9 $\frac{4}{15}$

10 $\frac{4}{21}$

11 $\frac{3}{5}$

12 $\frac{4}{7}$

4d

1 Method 1:

$$\frac{3}{2} \times \frac{2}{4} = \frac{(3 \times 2)}{(2 \times 4)}$$
$$= \frac{6}{8}$$
$$= \frac{3}{4}$$

Method 2:

$$\frac{3}{\cancel{2}_{1}} \times \frac{\cancel{2}^{1}}{4} = \frac{3}{1} \times \frac{1}{4}$$
$$= \frac{3}{4}$$

2 Method 1:

$$\frac{5}{12} \times \frac{6}{2} = \frac{(5 \times 6)}{(12 \times 2)}$$
$$= \frac{30}{24}$$
$$= \frac{5}{4}$$
$$= 1\frac{1}{4}$$

Method 2:

$$\frac{5}{\cancel{12}_{2}} \times \frac{\cancel{6}^{1}}{2} = \frac{5}{2} \times \frac{1}{2}$$
$$= \frac{5}{4}$$
$$= 1\frac{1}{4}$$

4e

1 Method 1:

$$5 \times 1\frac{1}{5} = (5 \times 1) + (5 \times \frac{1}{5})$$
$$= 5 + 1$$
$$= 6$$

Method 2:

$$5 \times 1\frac{1}{5} = 5 \times \frac{6}{5}$$
$$= \frac{5}{1} \times \frac{6}{5}$$
$$= 6$$

2 Method 1:

$$1\frac{2}{3} \times 6 = (1 \times 6) + (\frac{2}{3} \times 6)$$
$$= 6 + 4$$
$$= 10$$

Method 2:

$$1\frac{2}{3} \times 6 = \frac{5}{3} \times 6$$
$$= \frac{5}{3} \times \frac{6}{1}$$
$$= 10$$

4f

1 $\frac{1}{3}$

2 $\frac{5}{6}$

3 $4\frac{1}{2}$

4 $2\frac{2}{9}$

5 7

6 6

7 $4\frac{1}{2}$

8 $\frac{4}{5}$

9 6

10 $\frac{4}{9}$

11 $\frac{3}{35}$

12 $\frac{4}{7}$

4g

1 20

2 $2\frac{1}{2}$

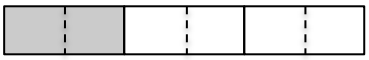
3 6

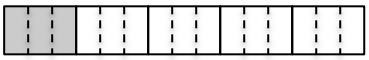
4 48 oz

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

6 36 g

4h

1 $\frac{1}{6}$ 

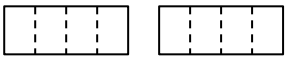
2 $\frac{1}{15}$ 

4i

1 $3 \div \frac{1}{6} = \underline{18}$

There are $\underline{18}$ groups of $\frac{1}{6}$ in $\underline{3}$ wholes.

2 $2 \div \frac{1}{4} = \underline{8}$



There are $\underline{8}$ groups of $\frac{1}{4}$ in $\underline{2}$ wholes.

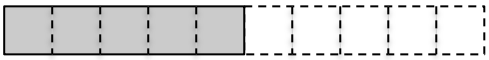
3 20

4 18

4j

1 10

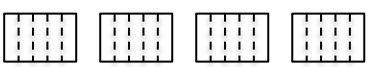
2 $\frac{1}{10}$



3 $\frac{1}{45}$

4 28

5 45



6 $\frac{1}{8}$

7 $\frac{1}{27}$

8 20

4k

Yes, I agree. Answers will vary. Sample:

$4 \times 4 = 16$

$4 \div \frac{1}{4} = 16$

Chapter 5

5a

1 Answers will vary. Sample: $5 + 0 = 5$

2 Answers will vary. Sample: $3 \times 5 = 5 \times 3$

3 Answers will vary. Sample: $(5 \times 6) \times 8 = 5 \times (6 \times 8)$

4 Answers will vary. Sample: $16 \times 3 = (10 \times 3) + (6 \times 3)$

5 Answers will vary. Sample: $8 \times 0 = 0$

5b

Steps:	Rewritten problem:
multiply 2 and 5	$3 + 10 + 3 \div 3 + 5$
divide 3 and 3	$3 + 10 + 1 + 5$
add 3 and 10	$13 + 1 + 5$
add 13 and 1	$14 + 5$
add 14 and 5	19

Answers will vary

5c

1 –

2 ×

3 $g \div 2$

4 $g + 2$

5d

1 $m + 5$

2 $w - 3$

Answer Key

3 $3r$

4 $\frac{r}{6}$

5 $4 + y$

6 $57t$

7 $\frac{y}{10} + 5$

8 $4n + 3$

9 $4(r + 4)$

5e

2 $3 \times 6 = 18$

3 $6 - 6 = 0$

4 $12 \div 6 = 2$

5 $2 \times 10 + 4 = 24$

6 $14 + 10 - 10 = 14$

7 $4 + 10 \times 3 = 34$

8 $25 - 10 \div 2 = 20$

5f

Today's age	Rachel's age 3 years ago	Rachel's age 5 years from now	Rachel's age when she's twice as old
m years	$(m - 3)$ years	$(m + 5)$ years	$2m$ years
5 years	2 years	10 years	10 years
10 years	7 years	15 years	20 years
15 years	12 years	20 years	30 years
20 years	17 years	25 years	40 years

1 5 years

2 The difference in the ages increased in multiples of 5.

5g

1 4

2 3

3 8

4 6

5 7

6 100

7 6

8 Accept any answers except 0

5h

1 $5(2) + 3 = 13$
$x = \underline{2}$

2 $3 - 2(1) = 1$
$x = \underline{1}$

3 $\frac{1}{2}(10) - 1 = 4$
$x = \underline{10}$

4 $3(2) + 7 = 13$
$x = \underline{2}$

5 $14 \div 2 + 3 = 10$
$x = \underline{14}$

6 $4(3) + 7 = 19$
$x = \underline{3}$

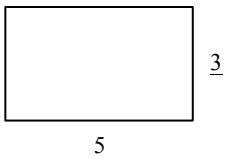
5i

Answers will vary

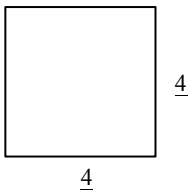
Chapter 6

6a

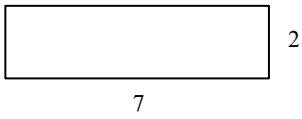
1 15



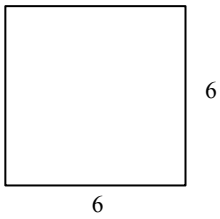
2 16



3 14



4 36



6b

1 $\frac{1}{32}$

2 $\frac{1}{6}$

3 $\frac{4}{15}$

4 $\frac{5}{7}$

5 $\frac{5}{12}$

6 $\frac{1}{3}$

7 $\frac{1}{2} \times \frac{4}{5}$; $\frac{2}{5}$

8 $\frac{2}{3} \times \frac{5}{7}$; $\frac{10}{21}$

6c

1 Method 1:

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

$= \frac{1}{4}$

Method 2:

$\frac{2}{4} \times \frac{1}{2} = \frac{1}{4}$

2 Method 1:

$\frac{1}{25} + \frac{1}{25} + \frac{1}{25} + \frac{1}{25} + \frac{1}{25} + \frac{1}{25} = \frac{6}{25}$

Method 2:

$\frac{3}{5} \times \frac{2}{5} = \frac{6}{25}$

6d

1 $\frac{2}{5}$

2 $\frac{4}{25}$

3 $\frac{8}{35}$

4 $\frac{9}{16}$

6e

1 Length of the garage

$= 14\frac{1}{5} + 2 + 2$

$= 18\frac{1}{5}$ ft

Breadth of the garage

$= 6\frac{1}{3} + 2 + 2$

$= 10\frac{1}{3}$ ft

The dimensions of the garage are $18\frac{1}{5}$ ft × $10\frac{1}{3}$ ft.

2 Area of the garage

$= 18\frac{1}{5} \times 10\frac{1}{3}$

$= 188\frac{1}{15}$ ft^2

The area of the garage is $188\frac{1}{15}$ ft^2.

3 No. Answers will vary. Sample: He would just have to double the car space instead of the garage space.

6f

Answers will vary. Sample:

Step 1: Combine the two triangles to form a square.

Step 2: Area of the square = 4 × 4
= 16 in.^{2}

Step 3: Area of the rectangle = $8\frac{1}{2} \times 4$
= 34 in.^{2}

Step 4: Area of the figure = 16 + 34
= 50 in.^{2}

Chapter 7

7a

1 Answers will vary. Sample:

6	63	8
56		54
9	48	7

Product = 3,024
(Accept any multiple of 3,024)

2 Answers will vary. Sample:
I found the least common multiple of 48, 56, 63, and 54, which was 3,024. Then I worked backwards to get the answers to the other blocks.

7b

1 5
2 1
3 6
4 9
5 40
6 8
7 3
8 3
9 81
10 60
11 9
12 7

7c

1 9; 9; 1
2 8; 2; 1
3 8; 8; 4
4 Answers will vary. Sample:
$40 \div 5 = 8$; $8 \div 2 = 4$; $4 \div 4 = 1$

7d

1 84
2 91
3 296
4 228
5 4,826
6 21,690
7 $52{,}760 \times 4 = 211{,}040$

$$\begin{array}{r} {\scriptstyle 1\ 3\ 2} \\ 52,760 \\ \times \quad 4 \\ \hline 211,040 \end{array}$$

There are 211,040 spectators altogether in 4 sold-out games.

7e

1 234
2 201
3 71
4 29
5 69
6 51
7 701
8 1,624 R 1
9 488 R 4

7f

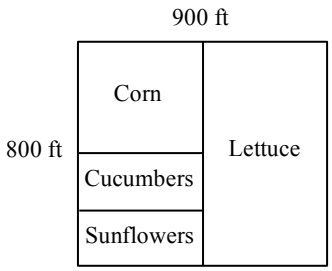
1 $475 \div 5 = \underline{95}$; $\underline{95} \times 5 = 475$
2 $567 \div 7 = \underline{81}$; $\underline{81} \times 7 = \underline{567}$
3 $5{,}020 \div 4 = \underline{1{,}255}$;
$\underline{1{,}255} \times \underline{4} = \underline{5{,}020}$
4 $4{,}340 \div 8 = \underline{542 \text{ R } 4}$;
$\underline{542} \times \underline{8} = \underline{4{,}336}$;
$\underline{4{,}336} + \underline{4} = \underline{4{,}340}$

7g

1 585,640 yd^2
2 19,118
3 47,795,000 gallons

7h

1



2 Corn: $\underline{180{,}000}$ ft^2
Cucumbers: $\underline{90{,}000}$ ft^2
Lettuce: $\underline{360{,}000}$ ft^2
Sunflowers: $\underline{90{,}000}$ ft^2

7i

1 Number of pillows produced in a 5-day work week
$= 5 \times 11{,}760$
$= 58{,}800$
Number of boxes needed
$= 58{,}800 \div 12$
$= 4{,}900$
It takes 4,900 boxes to ship all the pillows.
2 Amount of foam needed
$= 11{,}760 \times 18$
$= 211{,}680$ oz
211,680 oz of foam are needed.
3 Amount of polyester needed
$= 58{,}800 \times 1\frac{1}{2}$
$= 88{,}200$ lbs
The factory would use 88,200 lbs of polyester.

7j

1 Number of days it will take
$= 3{,}299 \div 265$
$= 13$ (rounded to the nearest day)
It will take Josiah's family 13 days to get to Seattle.
2 Amount of gas needed
$= 3{,}299 \div 28$
$= 118$ gallons (rounded to the nearest gallon)
They will need 118 gallons of gas to drive the entire distance.

3 Number of times needed at least
= 118 ÷ 17
= 7 (rounded to the nearest whole number)
Josiah's family will need to fill the tank at least 7 times.

4 Amount of money it will cost
= $118 \times 3\frac{1}{2}$
= $413
It will cost Josiah's family $413.

7k

Answers will vary

Chapter 8

8a

1 0.3
2 0.45
3 0.4
4 0.03
5 0.465
6 0.704
7 0.5
8 0.075
9 0.221
10 0.4
11 0.012
12 0.02

8b

1 4.2
2 3.05
3 42.198
4 32.043
5 6.005
6 23.204
7 $5\frac{2}{5}$
8 $4\frac{9}{25}$
9 $5\frac{1}{2}$
10 $6\frac{71}{100}$
11 $82\frac{7}{50}$
12 $104\frac{13}{25}$

8c

1 $0.4 + 0.5 = \frac{4}{10} + \frac{5}{10}$
$= \frac{9}{10}$

2 $0.45 + 0.33 = \frac{45}{100} + \frac{33}{100}$
$= \frac{78}{100}$
$= \frac{39}{50}$

3 $0.25 + 0.37 = \frac{25}{100} + \frac{37}{100}$
$= \frac{62}{100}$
$= \frac{31}{50}$

4 0.79 Rewrite:
$$\begin{array}{r} 0.53 \\ +\ 0.26 \\ \hline 0.79 \end{array}$$

5 1.13 Rewrite:
$$\begin{array}{r} {}^{1}0.{}^{1}45 \\ +\ 0.68 \\ \hline 1.13 \end{array}$$

6 0.75 Rewrite:
$$\begin{array}{r} 0.45 \\ +\ 0.30 \\ \hline 0.75 \end{array}$$

7 0.242 Rewrite:
$$\begin{array}{r} 0.042 \\ +\ 0.200 \\ \hline 0.242 \end{array}$$

8d

1 $0.6 - 0.2 = \frac{6}{10} - \frac{2}{10}$
$= \frac{4}{10}$
$= \frac{2}{5}$

2 $0.8 - 0.3 = \frac{8}{10} - \frac{3}{10}$
$= \frac{5}{10}$
$= \frac{1}{2}$

3 $0.67 - 0.34 = \frac{67}{100} - \frac{34}{100}$
$= \frac{33}{100}$

Answer Key

4 0.09 Rewrite:

$$\begin{array}{r} {}^{1}0\,.\,{}^{1}{}^{13}2\not{3} \\ -\ 0\,.\,1\,4 \\ \hline 0\,.\,0\,9 \end{array}$$

5 0.19 Rewrite:

$$\begin{array}{r} {}^{2}0\,.\,{}^{1}{}^{14}3\not{4} \\ -\ 0\,.\,1\,5 \\ \hline 0\,.\,1\,9 \end{array}$$

6 0.289 Rewrite:

$$\begin{array}{r} {}^{3}0\,.\,{}^{1}{}^{10}\not{4}\not{0}9 \\ -\ 0\,.\,1\,2\,0 \\ \hline 0\,.\,2\,8\,9 \end{array}$$

7 2.997 Rewrite:

$$\begin{array}{r} {}^{2}\not{3}\,.\,{}^{9}{}^{9}{}^{15}\not{0}\not{0}\not{5} \\ -\ 0\,.\,0\,0\,8 \\ \hline 2\,.\,9\,9\,7 \end{array}$$

8e

1

Grade Level	Money Earned	Money Earned in Dollars and Cents
1	$40.15	$40.15
2	4,500 pennies	$45.00
3	50 dollars and 15 cents	$50.15
4	400 dimes and 750 pennies	$47.50
5	1,225 pennies, 300 dimes, 10 dollars	$52.25

2 Total amount raised
= $40.15 + $45.00 + $50.15 + $47.50 + $52.25
= $235.05
The total amount raised was $235.05.

3 1 2 4 3 5

8f

1 621.01 kg

2 587.69 kg

3 Maximum weight allowed per rider
= 40.82 + 580.19 + 7.5
= 628.51 kg
628.51 + 628.51 + 628.51 + 628.51 = 2,514.04 kg
A fifth rider with the maximum weight will exceed the bridge's capacity of 2,814 kg.
So, the greatest number of riders with the maximum weight that can be on the bridge at any one time is 4.

8g

Answers will vary

Chapter 9

9a

1 450; 4,500; 45,000

2 480; 4,800; 48,000

3 210; 2,100; 21,000

4 140; 1,400; 14,000

9b

1 10

2 3; 10; 300

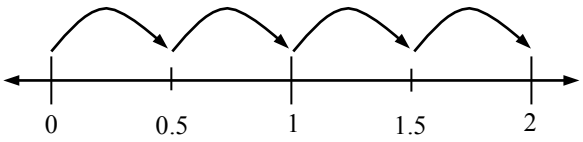
3 4; 4; 4

4 100; 10; 10

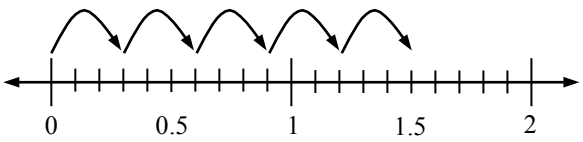
5 60; 6; 60

9c

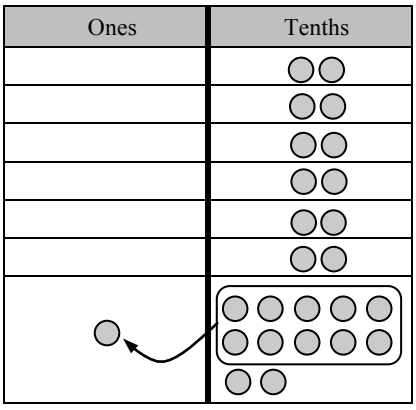
1 2



2 1.5



3 1.2



9d

1 18; 1.8

2 7; 56; 0.56

3 1.6

4 1.5

5 0.54

6 4.8

7 0.64

8 2.7

9 3.6

10 0.35

Answer Key

11 9
12 8.1
13 4.2
14 0.08

9e

	Thousands	Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths
7				○○○○			
7 × 10			○○○○				
7 × 100		○○○○					
7 × 1,000	○○○○						
0.07						○○○○	
0.07 × 10					○○○○		
0.07 × 100				○○○○			
0.07 × 1,000			○○○○				
0.007							○○○○
0.007 × 10						○○○○	
0.007 × 100					○○○○		
0.007 × 1,000				○○○○			

1 70; 700; 7,000
0.7; 7; 70
0.07; 0.7; 7

9f

1 45
2 4,500
3 450
4 45
5 4.5
6 4.5
7 450
8 45

9g

1 0.4

Ones	Tenths	Hundredths
	○○○○○	

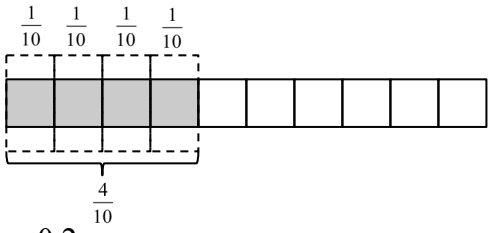
2 0.03

Ones	Tenths	Hundredths
		○○○○○○

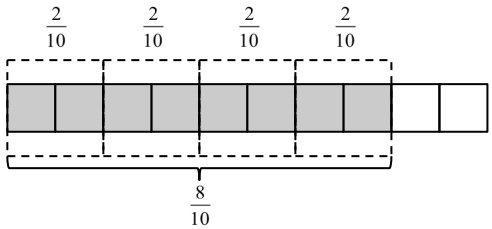
3 0.7

Ones	Tenths	Hundredths
○	○○○○○○○○○○	

4 0.1



5 0.2



9h

1 0.1
2 0.09
3 0.02
4 0.045
5 0.25
6 0.025
7 Answers will vary

9i

	Ones	Tenths	Hundredths	Thousandths
5	○○○○○			
5 ÷ 10		○○○○○		
5 ÷ 100			○○○○○	
5 ÷ 1,000				○○○○○

1 0.5; 0.05; 0.005

	Tens	Ones	Tenths	Hundredths	Thousandths
23	○○	○○○			
23 ÷ 10		○○	○○○		
23 ÷ 100			○○	○○○	
23 ÷ 1,000				○○	○○○

2 2.3; 0.23; 0.023
3 0.045; 0.045; 0.045

9j

1

Number	0.65	8.6	92	870
÷ 10	0.065	0.86	9.2	87
÷ 100	0.0065	0.086	0.92	8.7
÷ 1,000	0.00065	0.0086	0.092	0.87

2 10
3 100
4 10
5 10
6 1,000
7 100

Answer Key

9k

1	6.6
2	61
3	0.63
4	61.8
5	6.8
6	0.67

0.63 0.67 6.6 6.8 61 61.8

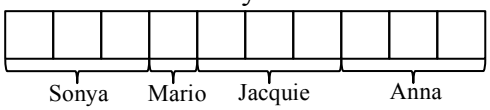
9l

1	0.324 km
2	381 m
3	10,100,000 kg
4	331,000 metric tons
5	The Empire State Building weighs more than thirty times the Eiffel Tower. $30 \times 10{,}100 = 303{,}000$ is smaller than 331,000.

9m

1 $96.12; $32.04; $96.12; $96.12

2 Sonya, Jacquie and Anna raised the most money.



9n

64 cm wide by 44.5 cm long
I found the width by multiplying 6.4 by 10, and I found the length by multiplying the 8.9 by 5.

9o

1	Answers will vary
2	Answers will vary
3	Answers will vary

Chapter 10

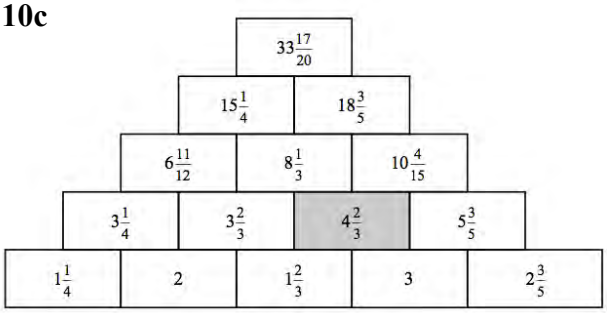
10a

1	5
2	1
3	2
4	8
5	6
6	9
7	7
8	3
9	9
10	6
11	4
12	5
13	8
14	3
15	1

10b

1	1
2	$\frac{2}{3}$
3	$\frac{3}{5}$
4	$\frac{3}{4}$
5	$\frac{9}{10}$
6	$\frac{19}{35}$
7	$\frac{3}{4}$
8	$1\frac{1}{8}$
9	$1\frac{3}{20}$
10	$1\frac{1}{6}$
11	$1\frac{3}{10}$
12	$\frac{11}{12}$
13	$\frac{73}{110}$
14	$1\frac{31}{45}$
15	$1\frac{13}{56}$

10c



10d

1 Yes

2 No; $\frac{9}{20}$

3 Yes

4 Yes

5 No; $\frac{2}{5}$

10e

1 7

2 6

3 $5\frac{5}{6}$

4 $2\frac{5}{8}$

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

6 $2\frac{13}{16}$

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

8 1

9 $6\frac{3}{4}$

10f

	÷ 2	÷ 4	÷ 8	÷ 10	÷ 5	÷ 9
$\frac{1}{2}$	$\frac{1}{4}$	$\frac{1}{8}$	$\frac{1}{16}$	$\frac{1}{20}$	$\frac{1}{10}$	$\frac{1}{18}$
$\frac{1}{3}$	$\frac{1}{6}$	$\frac{1}{12}$	$\frac{1}{24}$	$\frac{1}{30}$	$\frac{1}{15}$	$\frac{1}{27}$
$\frac{3}{4}$	$\frac{3}{8}$	$\frac{3}{16}$	$\frac{3}{32}$	$\frac{3}{40}$	$\frac{3}{20}$	$\frac{1}{12}$
$\frac{5}{9}$	$\frac{5}{18}$	$\frac{5}{36}$	$\frac{5}{72}$	$\frac{1}{18}$	$\frac{1}{9}$	$\frac{5}{81}$

10g

1 8

2 12

3 18

4 32

5 8

10h

1 ×; −

2 +; −

3 +; ×

4 ×; +

5 ×; −

6 −; +

7 +; ×; +

8 +; −; ×

Chapter 11

11a

1 less likely

2 equally likely

3 more likely

11b

1 $\frac{1}{2}$

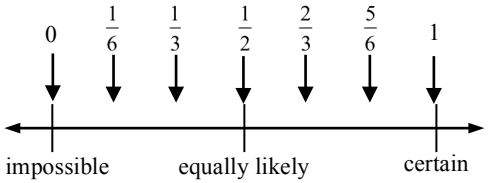
2 $\frac{1}{3}$

3 $\frac{1}{6}$

4 0

5 $\frac{5}{6}$

6 1



11c

1 $\frac{2}{5}$

2 6

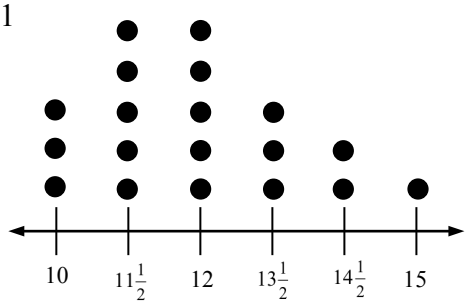
3 Total amount of water

$= 2(\frac{1}{4}) + 2(\frac{3}{4}) + 3(1\frac{1}{4}) + 3(1\frac{1}{2})$

$= 10\frac{1}{4}$ cups

11d

1



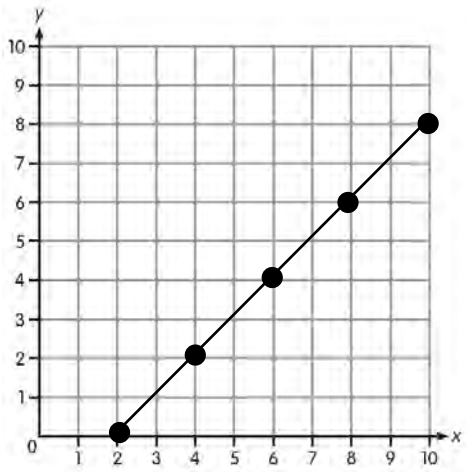
2 11

3 87.5

Answer Key

11e

x	2	4	6	8	10
y	0	2	4	6	8



11f

1 $A = (1, 2)$
$B = (5, 4)$
$C = (0, 4)$
$D = (2, 1)$
$E = (5, 1)$

2 Answers will vary

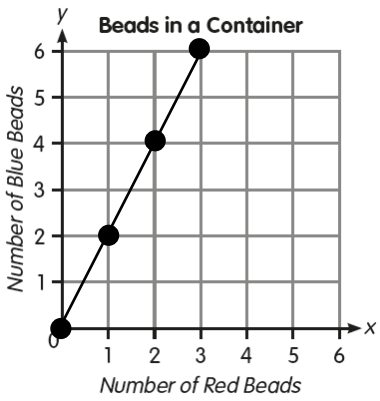
11g

1 $y = \underline{2}x$

2

x	0	1	2	3
y	0	2	4	6

3



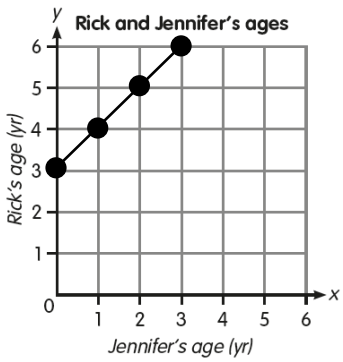
11h

1 $y = \underline{x + 3}$

2

x (yr)	0	1	2	3
y (yr)	3	4	5	6

3



11i

1

x (cups)	1	2	3	4
y (oz)	8	16	24	32

2 $y = \underline{8x}$

11j

1

x (h)	1	2	3	4
y (m)	60	120	180	240

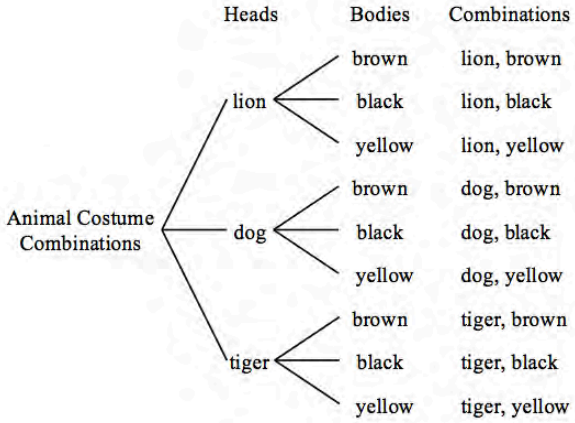
2 $y = \underline{60x}$

3 The car traveled 60 miles per hour.

4 60 m/h

5 $10 \times 60 = 600$ m

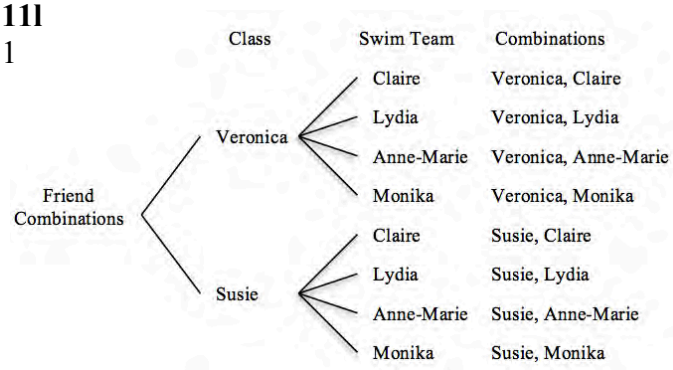
11k



Number of combinations = $\underline{3} \times \underline{3} = \underline{9}$

11l

1



2 $\underline{2} \times \underline{4} = \underline{8}$

3 Veronica, Claire
Veronica, Lydia
Veronica, Anne-Marie
Veronica, Monika

4 $\underline{1} \times \underline{4} = \underline{4}$

Chapter 12

12a

1 $\frac{1}{10}$

2 $\frac{11}{12}$

3 $\frac{14}{45}$

4 $\frac{47}{64}$

5 $\frac{17}{25}$

6 $\frac{13}{18}$

7 $\frac{1}{14}$

8 $\frac{4}{25}$

9 $\frac{21}{38}$

10 $\frac{7}{10}$

12b

1 2

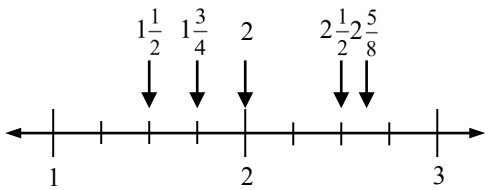
2 $1\frac{1}{2}$

3 $2\frac{5}{8}$

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

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

6 $1\frac{1}{2}$



12c

1 2

2 2

3 3

4 4

5 12

6 10

7 3

8 $2\frac{2}{7}$

9 $1\frac{3}{5}$

10 $\frac{1}{2}$

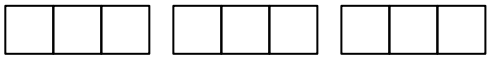
11 12

12 $\frac{1}{5}$

12d

1 $4 \times \frac{12}{16} = 3$; 3

2



$3 \div \frac{1}{3} = 9$; 9

12e

1 No, Debby does not have enough vinegar and water.

2 Amount of vinegar she will need

$= 12\frac{3}{4} - 3(4)$

$= \frac{3}{4}$ oz

Amount of water she will need

$= 16\frac{9}{10} - 16$

$= \frac{9}{10}$ oz

Amount of plaster left over

$= 2(2\frac{1}{2}) - 4\frac{1}{2}$

$= \frac{1}{2}$ lb

3 Baking Soda: $\frac{3}{4}$ lb

Vinegar: $13\frac{1}{2}$ oz

Plaster: 4 lb

Water: $17\frac{4}{5}$ oz

12f

1 Oatmeal: $\frac{2}{3}$ cup

Butter: $\frac{1}{6}$ cup

Water: $\frac{1}{3}$ cup

Milk: $\frac{1}{4}$ cup

Whole wheat flour: $\frac{4}{3}$ cup

Shredded cheese: $\frac{7}{24}$ cup

Beef stock: $\frac{1}{3}$ tablespoon

2 1 bag of 24 biscuits;
3 bags of 8 biscuits;
4 bags of 6 biscuits;
6 bags of 4 biscuits;
8 bags of 3 biscuits;
12 bags of 2 biscuits;
24 bags of 1 biscuit

Chapter 13

13a

1 6,150
2 529,604
3 864
4 4,140
5 54
6 192
7 128
8 $\frac{3}{8}$
9 $\frac{7}{9}$

13b

1 6.8
2 3.18
3 11.23
4 0.88
5 0.07
6 1.32
7 109.2
8 52
9 12.12

13c

1 30°
2 180° – 60° – 90° = 30°
3 30°;
I divided 60° by 2 to obtain 30°.
4 Accept all answers such that
$m\angle a + m\angle b + m\angle c = 180°$

13d

1 110°
2 70°
3 110°
4 360°

The measures of $\angle x$ and $\angle z$ are equal. They are vertically opposite angles, and vertically opposite angles are equal.

13e

1 $m\angle p = 90° - 45°$
$= 45°$
2 $m\angle q = 90° - 45°$
$= 45°$
3 Total measure = 90° + 45° + 45°
= 180°
4 Total measure = 90° + 45° + 45°
= 180°
5 Total measure
= 90° + 90° + 90° + 90°
= 360°

13f

1 60°
2 60°
3 30°
4 30°
5 120°
6 60°; 180°

13g

1 $m\angle ABC = 90^\circ$; $m\angle ADC = 90^\circ$
$m\angle ACD = 45^\circ$; $m\angle BAC = 45^\circ$
$m\angle DAC = 45^\circ$
Sum of the angle measures
$= 90^\circ + 45^\circ + 45^\circ + 90^\circ + 45^\circ + 45^\circ$
$= 360^\circ$

2 $m\angle RST = 90^\circ$; $m\angle TWR = 90^\circ$
$m\angle RTW = 50^\circ$; $m\angle TRW = 40^\circ$
$m\angle SRT = 50^\circ$
Sum of the angle measures
$= 90^\circ + 40^\circ + 50^\circ + 90^\circ + 40^\circ + 50^\circ$
$= 360^\circ$

13h

1 60°; 60°

2 Sum of the angle measures
$= 120^\circ + 60^\circ + 120^\circ + 60^\circ$
$= 360^\circ$

3 The sum of angles in a quadrilateral is 360°.

4 Answers will vary

13i

1 Perimeter
$= \underline{6.7} + \underline{2.5} + \underline{6.7} + \underline{2.5}$
$= \underline{18.4}$ ft

2 253,300

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

4 $15\frac{1}{2}$

13j

1 8

2 10; 7.02

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

4 9; 9

13k

1 Dimension: $\underline{6}$ ft × $\underline{2}$ ft, or
$\underline{4}$ ft × $\underline{3}$ ft
Number of stations: 18

2 216

3

washing station	washing station	washing station
washing station	washing station	washing station
washing station	washing station	washing station
washing station	washing station	washing station
washing station	washing station	washing station
washing station	washing station	washing station

, or

washing station	washing station	washing station	washing station	washing station	washing station
washing station	washing station	washing station	washing station	washing station	washing station
washing station	washing station	washing station	washing station	washing station	washing station

13l

1 140°

2 40°

13m

Answers will vary

Chapter 14

14a

1 6
2 20
3 56
4 54
5 8
6 21
7 40
8 18
9 72
10 40
11 81
12 49
13 48
14 60

Answer Key

15 64

14b

1 $\underline{4} \times \underline{4} = 4^2$
$= \underline{16}$

2 $\underline{5} \times \underline{5} = \underline{5^2}$
$= \underline{25}$

3 7

4 10

5 9

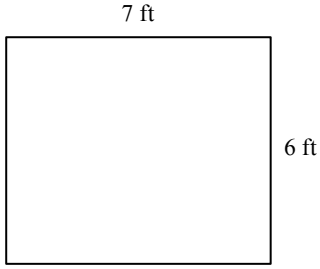
14c

1

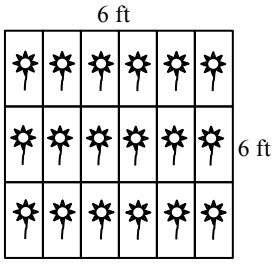
Length of the Side of the Square (s)	Area of the Square (s^2)	Sketch of the Square
2	4	
3	9	
4	16	
5	25	

2 $\underline{1}$, 4, 9, 16, $\underline{25}$, $\underline{36}$, 49, $\underline{64}$, 81, $\underline{100}$, $\underline{121}$, $\underline{144}$, $\underline{169}$

14d

1 

2 6 ft × 6 ft

3 

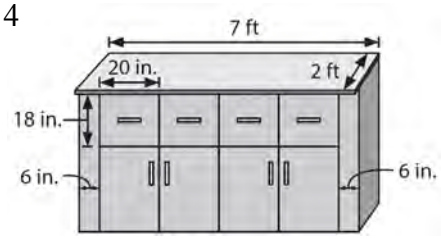
Each  represents 1 sunflower plant.

14e

1 14 ft^2

2 Yes.
The length of 4 drawers is 6 ft.

3 6 in.

4 

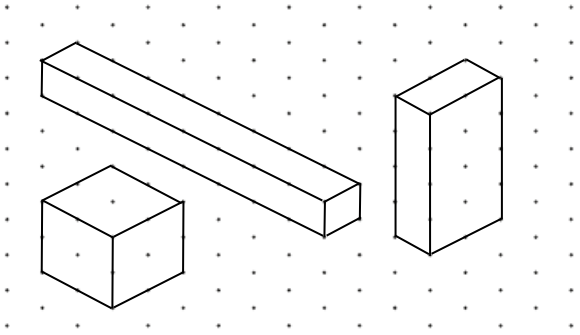
14f

1 30

2 $l = \underline{9}$ in.; $w = \underline{1.2}$ in.; $h = \underline{3}$ in.
Volume = $\underline{32.4}$ $in.^3$

3 $l = \underline{1\frac{1}{4}}$ cm; $w = \underline{\frac{3}{4}}$ cm; $h = \underline{\frac{8}{10}}$ cm
Volume = $\underline{\frac{3}{4}}$ cm^3

14g

1 

2 Volume of the top solid
$= 15 \times 7 \times 4$
$= 420\ cm^3$
Volume of the bottom solid
$= 12 \times 5 \times 2$
$= 120\ cm^3$
Total volume of the solid
$= 420 + 120$
$= 540\ cm^3$

14h

Length of the Side of the Cube	Expression for Volume	Volume Written as a Cube Number	Volume
2	$2 \times 2 \times 2$	2^3	8
3	$3 \times 3 \times 3$	3^3	27
4	$4 \times 4 \times 4$	4^3	64
5	$5 \times 5 \times 5$	5^3	125

14i

1 Volume = $10 \times 10 \times 10$
$= 10^3$
$= 1{,}000 \text{ cm}^3$

2 Volume = $6 \times 6 \times 6$
$= 6^3$
$= 216 \text{ in.}^3$

3 Volume = $\frac{1}{2} \times \frac{1}{2} \times \frac{1}{2}$
$= \frac{1}{2}^3$
$= \frac{1}{8} \text{ m}^3$

4 Volume = $0.3 \times 0.3 \times 0.3$
$= 0.3^3$
$= 0.027 \text{ yd}^3$

14j

1 $(4 \times 2) \times 3 = 4 \times (2 \times 3) = 24$

2 $(10 \times 3) \times 2 = 10 \times (3 \times 2) = 60$

3 $8 \times (0.5 \times 9) = (8 \times 0.5) \times 9 = 36$

4 $\frac{1}{2} \times (3 \times 8) = (\frac{1}{2} \times 3) \times 8 = 12$

5 $1\frac{3}{4} \times (2\frac{2}{8} \times 3.5)$
$= (1\frac{3}{4} \times 2\frac{2}{8}) \times 3.5$
$= 13.78125$

14k

1 No. The volume of the luggage is 2,772 in.^3, which is less than the space Martell's clothing takes up.

2 Suitcase A: $\underline{13{,}818 \text{ in.}^3}$
Suitcase B: $\underline{14{,}080 \text{ in.}^3}$
She should choose Suitcase B as it will give her the greatest volume.

14l

1 $2{,}000 \text{ cm}^3$

2 Circle the pans with dimensions
23 cm × 23 cm × 4 cm,
18 cm × 28 cm × 5 cm, and
13 cm × 23 cm × 8 cm

3 These pans have volumes that are greater than the volume required by the recipe.

14m

Answers will vary

In a Minute I Can Do!
Repeated Practice 1

1	54
2	9
3	14
4	15
5	63
6	0
7	32
8	48
9	40
10	24
11	27
12	10
13	50
14	25
15	18
16	16
17	42
18	72
19	16
20	60
21	6
22	36
23	6
24	0
25	81
26	56
27	49
28	30
29	12
30	21

In a Minute I Can Do!
Repeated Practice 2

1	8
2	24
3	28
4	20
5	18
6	35
7	56
8	16
9	21
10	36
11	45
12	48
13	10
14	24
15	36
16	14

Answer Key

17	2
18	9
19	81
20	9
21	40
22	3
23	32
24	64
25	72
26	42
27	25
28	90
29	63
30	27

In a Minute I Can Do!
Repeated Practice 3

1	2
2	4
3	8
4	8
5	10
6	6
7	8
8	8
9	1
10	4
11	6
12	10
13	6
14	8
15	6
16	8
17	6
18	2
19	6
20	6
21	5
22	4
23	4
24	6
25	2
26	6
25	2
26	6
27	6
28	8
29	10
30	8

In a Minute I Can Do!
Repeated Practice 4

1	2
2	10
3	1
4	9
5	9
6	3
7	9
8	4
9	7
10	3
11	2
12	7
13	4
14	5
15	4
16	3
17	7
18	10
19	5
20	4
21	5
22	7
23	7
24	9
25	4
26	2
27	6
28	8
29	4
30	2

In a Minute I Can Do!
Repeated Practice 5

1	1
2	42
3	4
4	56
5	9
6	90
7	49
8	9
9	48
10	8
11	70
12	6
13	54
14	4
15	7
16	5

17	56
18	72
19	3
20	21
21	9
22	36
23	8
24	28
25	10
26	64
27	6
28	4
29	7
30	24

In a Minute I Can Do!
Repeated Practice 6

1	10
2	63
3	6
4	32
5	6
6	36
7	45
8	6
9	81
10	9
11	40
12	2
13	15
14	4
15	5
16	7
17	18
18	40
19	4
20	30
21	24
22	27
23	5
24	25
25	7
26	80
27	8
28	6
29	9
30	9

In a Minute I Can Do!
Repeated Practice 7

1	1
2	1
3	$\frac{1}{8}$
4	$\frac{6}{7}$
5	$\frac{1}{9}$
6	$\frac{2}{5}$
7	$\frac{4}{5}$
8	$\frac{4}{9}$
9	$\frac{1}{3}$
10	$\frac{8}{11}$
11	1
12	0
13	$\frac{3}{4}$
14	$\frac{3}{4}$
15	$\frac{3}{7}$
16	$\frac{4}{5}$
17	$\frac{1}{2}$
18	$\frac{1}{3}$
19	$\frac{1}{4}$
20	$\frac{2}{5}$
21	$\frac{6}{11}$
22	$\frac{1}{6}$
23	0
24	1
25	$\frac{1}{6}$
26	$\frac{1}{4}$
27	$\frac{6}{7}$

Answer Key

28 1

29 $\frac{3}{10}$

30 $\frac{1}{3}$

In a Minute I Can Do!
Repeated Practice 8

1 $\frac{5}{6}$

2 $\frac{5}{8}$

3 0

4 $\frac{8}{9}$

5 $\frac{1}{12}$

6 $\frac{1}{2}$

7 $\frac{5}{6}$

8 $\frac{2}{9}$

9 $\frac{1}{12}$

10 $\frac{1}{2}$

11 1

12 $\frac{1}{8}$

13 $\frac{3}{4}$

14 $\frac{3}{4}$

15 $\frac{3}{8}$

16 $\frac{1}{2}$

17 $\frac{2}{3}$

18 1

19 $\frac{7}{12}$

20 $\frac{1}{8}$

21 $\frac{1}{5}$

22 $\frac{1}{3}$

23 $\frac{1}{8}$

24 $\frac{2}{3}$

In a Minute I Can Do!
Repeated Practice 9

1 $\frac{5}{6}$

2 $\frac{7}{12}$

3 $\frac{13}{40}$

4 $\frac{5}{12}$

5 $\frac{11}{18}$

6 $\frac{5}{6}$

7 $\frac{7}{12}$

8 $\frac{9}{10}$

9 $\frac{23}{63}$

10 $\frac{11}{14}$

11 $\frac{13}{15}$

12 $\frac{5}{6}$

13 $\frac{11}{24}$

14 $\frac{19}{20}$

In a Minute I Can Do!
Repeated Practice 10

1 $\frac{7}{12}$

2 $\frac{1}{12}$

3 $\frac{7}{20}$

4 $\frac{3}{10}$

5 $\frac{1}{6}$

6 $\frac{4}{15}$

Answer Key

7	$\frac{5}{12}$
8	$\frac{13}{28}$
9	$\frac{27}{40}$
10	$\frac{4}{21}$
11	$\frac{23}{35}$
12	$\frac{1}{6}$

In a Minute I Can Do!
Repeated Practice 11

1	1
2	2
3	2
4	5
5	2
6	5
7	9
8	3
9	9
10	8
11	9
12	7
13	6
14	2
15	8
16	3
17	1
18	10
19	9
20	9
21	5
22	10
23	7
24	2
25	7
26	6
27	5
28	10
29	3
30	1

In a Minute I Can Do!
Repeated Practice 12

1	6
2	6
3	2
4	3
5	90
6	7
7	80
8	3
9	50
10	20
11	90
12	20
13	5
14	15
15	8
16	42
17	3.6
18	40
19	120
20	34
21	3.2
22	61

In a Minute I Can Do!
Repeated Practice 13

1	9
2	36
3	8
4	21
5	2
6	10
7	42
8	8
9	12
10	9
11	30
12	5
13	18
14	4
15	6
16	5
17	56
18	7
19	4
20	64
21	6
22	12
23	6
24	28
25	6
26	25
27	9
28	4
29	7

Answer Key

30	18

In a Minute I Can Do!
Repeated Practice 14

1	5
2	30
3	6
4	49
5	3
6	1
7	54
8	8
9	6
10	6
11	24
12	2
13	81
14	9
15	8
16	3
17	40
18	4
19	4
20	18
21	42
22	6
23	7
24	25
25	5
26	10
27	8
28	4
29	8
30	3