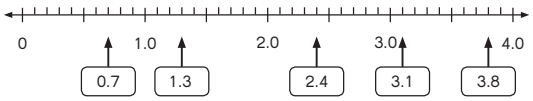
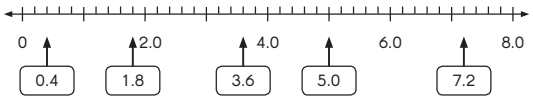
Answers

Chapter 7

Lesson 7.1

1. 0.4; 0.6
2. 0.7; 0.3
3. 0.9; 0.1
4. 1.2; 0.8
5. 1.6; 0.4
6. 2.1; 0.9
7. 0.9
8. 3.2
9. 

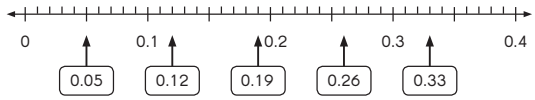
10. 

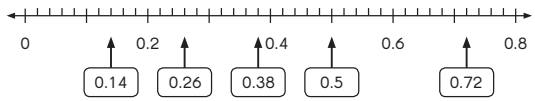
11. 0.4
12. 2.5
13. 6.8
14. 17.6
15. 3.9
16. 40.2
17. 0.6
18. 0.9
19. 4.8
20. 7.2
21. 16.1
22. 44.5
23. 6.3
24. 5.0 or 5
25. 21.0 or 21
26. 20.1
27. 30.0 or 30
28. 33.0 or 33

Number of Tenths	Fraction	Decimal
29. 6 tenths	$\frac{6}{10}$	0.6
30. 19 tenths	$1\frac{9}{10}$	1.9
31. 57 tenths	$5\frac{7}{10}$	5.7
32. 124 tenths	$12\frac{4}{10}$	12.4
33. 203 tenths	$20\frac{3}{10}$	20.3
34. 455 tenths	$45\frac{5}{10}$	45.5

35. $3\frac{7}{10}$; 3.7
36. $1\frac{9}{10}$; 1.9
37. $1\frac{3}{10}$; 1.3
38. 9
39. 6 ones
40. 2 tenths
41. 5 tens
42. 9 tens 0 ones
43. $5 + \frac{2}{10}$
44. $10 + 6 + \frac{3}{10}$
45. $8 + 0.4$
46. $70 + 0 + 0.9$
47. tenths; 0.7
48. ones; 8
49. 6; 60
50. 4; 0.4

Lesson 7.2

1. 0.16; 0.84
2. 0.05; 0.95
3. 0.89; 0.11
4. 1.2; 0.8
5. 1.06; 0.94
6. 2.03, 0.97
7. 0.53
8. 3.08
9. 

10. 

11. 0.09
12. 0.10
13. 0.35
14. 2.06
15. 0.86
16. 41.03
17. 50.22
18. 0.04
19. 0.19
20. 0.65
21. 0.8
22. 2.14
23. 15.03
24. 30.08
25. 1.69
26. 2.02
27. 2.5
28. 8 hundredths
29. 25 hundredths
30. 40 hundredths
31. 607 hundredths
32. 539 hundredths
33. 980 hundredths

Number of Hundredths	Fraction	Decimal
34. 1 hundredths	$\frac{1}{100}$	0.01
35. 6 hundredths	$\frac{6}{100}$	0.06
36. 9 hundredths	$\frac{9}{100}$	0.09
37. 13 hundredths	$\frac{13}{100}$	0.13
38. 59 hundredths	$\frac{59}{100}$	0.59
39. 106 hundredths	$1\frac{6}{100}$	1.06

40. 7 tenths; 5 hundredths
41. 3 ones; 6 hundredths
42. 8 hundredths
43. 6 ones; 2 tenths; 3 hundredths
44. 9 ones; 5 tenths; 0 hundredths
45. $1 + \frac{5}{10} + \frac{6}{100}$
46. $20 + 4 + 0 + \frac{7}{100}$
47. $3 + 0.8 + 0.09$
48. $50 + 1 + 0.5 + 0.02$
49. hundredths; 0.03
50. tenths; 0
51. 6; 60
52. 2; 0.02
53. \$0.35
54. \$0.70
55. \$1.08
56. \$2.40
57. \$6.35
58. \$9.05

Lesson 7.3 (Part 1)

1. 2.0
2. 1.4
3. 1.9
4. 1.2
5. 1.6
6. 1.27
7. 1.25
8. 1.29
9. 1.23
10. 1.21
11. 1.08; 1.10
    $1.06 + 0.02 = 1.08$
    $1.08 + 0.02 = 1.10$
12. 5.15; 6.35
    $3.95 + 1.2 = 5.15$
    $5.15 + 1.2 = 6.35$
13. 4.96; 4.64
    $5.28 - 0.32 = 4.96$
    $4.96 - 0.32 = 4.64$
14. 4.35; 3.15
    $5.55 - 1.2 = 4.35$
    $4.35 - 1.2 = 3.15$
15. 6.32; 6.26
    $6.28 + 0.04 = 6.32$
    $6.22 + 0.04 = 6.26$

Lesson 7.3 (Part 2)

1. 2.06 is greater than 2.03.
2. 0.32 is less than 0.35.
3. 8.32 is greater than 8.23.
4. 0.09 is less than 0.90.
5. $<$
6. $<$
7. $<$
8. $>$
9. greatest: 0.54; least: 0.15
10. greatest: 7.86; least: 6.78
11. 0.68; 0.82; 0.86
12. 0.89; 0.98; 0.99
13. 0.57; 0.70; 0.75
14. 5.46; 5.64; 6.54
15. 0.10; 0.09; 0.07
16. 0.99; 0.90; 0.09
17. 3.08; 0.83; 0.38
18. 9.48; 8.94; 8.49

Lesson 7.4 (Part 1)

1. 6; 6
2. 2; 2
3. 130.7 centimeters is about 131 centimeters.
4. 5.95 liters is about 6 liters.
5. 1.8 pounds is about 2 pounds.
6. 2.49 kilometers is about 2 kilometers.
7. \$39.59 is about 40 dollars.

Lesson 7.4 (Part 2)

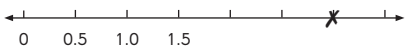
1. 3.1; 3.1
2. 13.1; 13.1
3. 2.05 pounds is about 2.1 pounds.
4. 1.34 meters is about 1.3 meters.
5. 15.59 kilometers is about 15.6 kilometers.
6. 3.46 liters is about 3 liters.
7. 96.52 pounds is about 97 pounds.
8. 1; 0.7
9. 1; 1.3
10. 3; 3.1
11. 9; 8.7
12. 19; 19.5
13. 24; 24.0
14. 36; 36.2
15. 42; 42.0

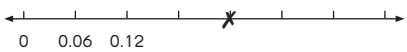
Lesson 7.5

1. 0.4
2. 0.67
3. 0.3
4. 0.49

5. 5.9
6. 8.79
7. 2; 0.2
8. 38; 0.38
9. 0.8
10. 0.5
11. 1.75
12. 0.3
13. 0.64
14. 7.2
15. $\frac{3}{5}$
16. $5\frac{7}{10}$
17. $1\frac{9}{20}$
18. $3\frac{9}{25}$

Put On Your Thinking Cap!

1. 

2. 

3. Accept any number from 5.31 to 5.39.
4. Accept any number from 0.41 to 0.49.
5. Accept any number from 3.86 to 3.94.
6. 83
7. 258
8. 370
9. 56
10. 182
11. 394
12. a. 9
    b. 9.0
13. 12.98
    pattern: + 2.2; + 2.2; + 2.2; + 2.2; + 2.2
14. 1.6
    pattern: − 0.04; − 0.04; − 0.04; − 0.04; − 0.04
15. 8.7
    pattern: + 0.5; + 1.0; + 1.5; + 2.0; + 2.5
16. 0.7
    pattern: − 0.2; − 0.4; − 0.6; − 0.8; − 1.0
17. 1.68
    pattern: + 0.01; + 0.01; − 0.02; − 0.02; + 0.01; + 0.01
18. 0.42
    pattern: − 0.3; − 0.6; − 0.9; − 1.2; − 1.5
19. 12.38
    pattern: − 0.4; + 1.4; − 0.8; + 2.8; − 1.2; + 4.2

Chapter 8

Lesson 8.1 (Part 1)

1. 1.9
2. 5; 7; 12; 1.2
3. 14; 23; 37; 3.7
4. 10.8
5. 32.9
6. 45.4
7. 23.2
8. 35.4
9. 33
10. 30.5
11. 40

Lesson 8.1 (Part 2)

1. 1.79
2. 71; 29; 100; 1.00
3. 38; 15; 53; 0.53
4. 65; 45; 110; 1.10
5. $30.99
6. $22.17
7. $44.34
8. $57.27
9. $0.59
10. $1.22
11. $1.36
12. $1.43

Lesson 8.2

1. 1.32
2. 25; 8; 17; 1.7
3. 34; 9; 25; 2.5
4. 32; 17; 15; 0.15
5. 21; 7; 14; 0.14
6. 0.63
7. 0.45
8. 0.29
9. 0.7
10. 3.9
11. 4.9
12. 8.34
13. 14.52
14. 11.09
15. 18.76

Lesson 8.3

1. 0.55 + 1.08 = 1.63
   2.50 − 1.63 = 0.87
   0.87 pound of potatoes are left.
2. $4.95 + $7.85 = $12.80
   $50.00 − $12.80 = $37.20
   Ms. Petrie has $37.20 left.

3. $58.5 - 29.7 = 28.8$
$71.4 - 28.8 = 42.6$
The weight of Container A is 42.6 pounds.

4. $1.04 + 0.24 = 1.28$ (Paul)
$1.28 - 0.16 = 1.12$
Royston jumps 1.12 meters.

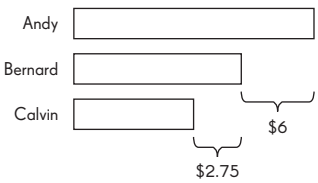
5. a. $7.49 + 9.87 = 17.36$
John travels 17.36 kilometers.
b. $17.36 + 9.87 = 27.23$
John travels a total of 27.23 kilometers.

6. $60 - 45.8 = 14.20$
a. The short stick is 14.20 centimeters shorter than the long stick.
b. 3.6 m = 360 cm
The length of the tail is 360 centimeters.
$60 \times 6 = 360$ cm
6 long sticks put end to end will be as long as the tail.

Put On Your Thinking Cap!

1. 7.37
$8.97 + 3.68 = 12.65$
$20.02 - 12.65 = 7.37$

2. Andy has \$8.75 more than Calvin.



$\$6 + \$2.75 = \$8.75$

3. $\$2.30 - \$1.95 = \$0.35$
Amount saved by buying 1 ballpoint pen on sale: \$0.35
$\$0.35 + \$0.35 + \$0.35 = \$1.05$
Amount saved by buying 3 ballpoint pens on sale is \$1.05.

4. $\$0.85 + \$0.85 + \$2.75 = \$4.45$
$\$10.00 - \$4.45 = \$5.55$
The amount of change Julio gets back is \$5.55.

5. $\$1.20 - \$0.85 = \$0.35$
A mechanical pencil costs \$0.35 more before the sale.
$\$3.50 - \$2.75 = \$0.75$
A correction pen costs \$0.75 more before the sale.
$\$0.35 + \$0.35 + \$0.75 = \$1.45$
Nicolas paid \$1.45 more than Julio.

6. a. $35.00 - 1.75 = 33.25$
$33.25 + 4.75 = 38$
The number is 38.
b. $8.75 + 3.78 = 12.53$
$12.53 - 6.75 = 5.78$
The number is 5.78.

Chapter 9

Lesson 9.1

1. $\angle ABC$; $\angle CBA$
2. $\angle QRS$; $\angle SRQ$
3. $\angle n$; $\angle WZY$
4. $\angle l$; $\angle YXW$
5. $\angle b$; $\angle HGF$
6. $\angle c$; $\angle FHG$
7. $\angle c$; $\angle LKO$
8. $\angle g$; $\angle KON$
9. $\angle e$; $\angle NML$
10. inner scale
11. outer scale
12. outer scale
13. inner scale
14. inner scale
15. outer scale
16. 125°; obtuse angle
17. 35°; acute angle
18. 100°; obtuse angle
19. 88°; acute angle
20. Estimates will vary.

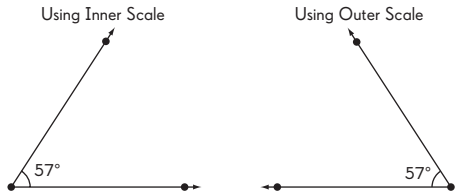
Angle	*p*	*q*	*r*	*s*
Measured ∠	37°	175°	128°	90°

Questions 21 to 26:

Accept any answer that is $-1°$ or $+1°$ from these answers.

21. 80°
22. 54°
23. 5°
24. 120°
25. 90°
26. 100°

Lesson 9.2

1. 

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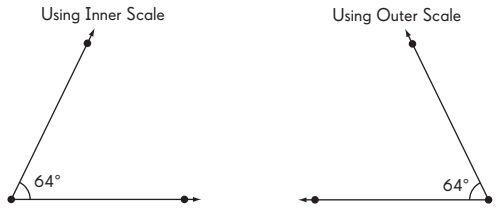
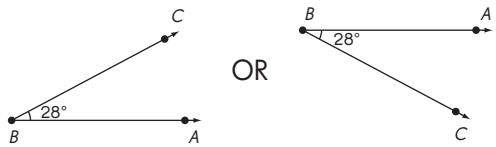
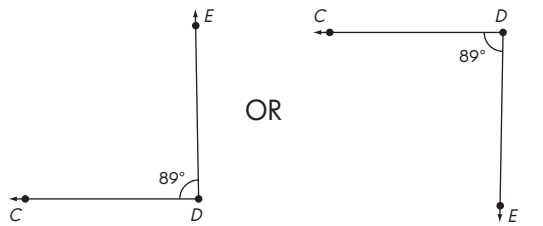
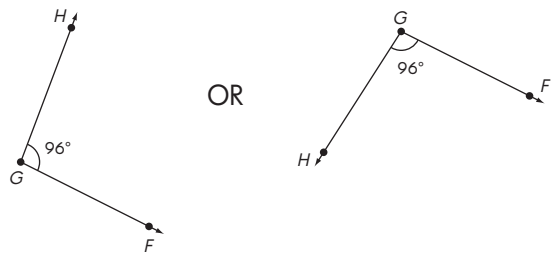
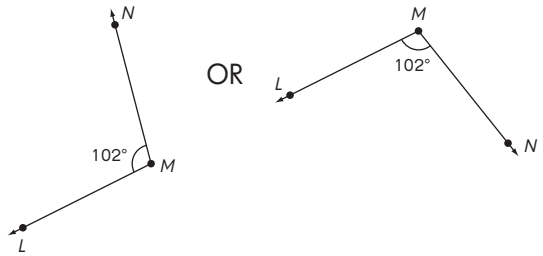
3. 

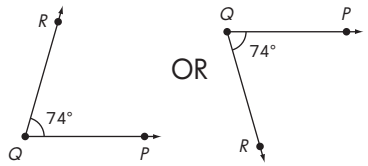
4. 

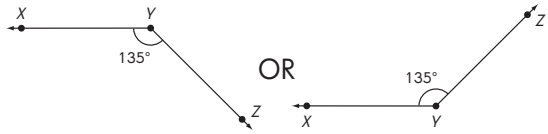
5. 

6. 

7. 

8. 

9. 

10. 

Lesson 9.3

1. $\frac{1}{4}$ -turn
2. $\frac{1}{2}$ -turn
3. $\frac{3}{4}$ -turn
4. 360°
5. 270°
6. 90°
7. 180°
8. Thinking Skill – Spatial visualization
   south → west → north
   Samantha ends up facing north.
9. Thinking Skill – Spatial visualization
   west → south → north
   Dino ends up facing north.
10. Draw 60° for this angle
11. Draw this angle as 145°
12. $\angle ABC = 360° - 45° = 315°$
13. $\angle PQR = 360° - 120° = 240°$
14. $\angle DEF = 360° - 75° = 285°$
15. $\angle XYZ = 360° - 138° = 222°$
16. $\angle PQS = 54° + 38°$
    $= 92°$
17. $\angle CDF = 76° + 87°$
    $= 163°$
18. $\angle WXZ = 59° + 85°$
    $= 144°$

Put On Your Thinking Cap!

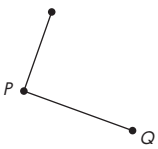
1. 65°
2. 51°
3. 23°
4. There are 14 squares or rectangles.
   $14 \times 4 = 56$ right angles

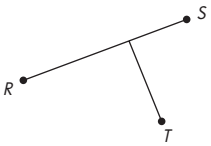
5. Thinking skills: Comparing

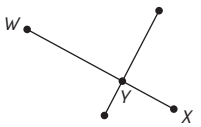
Figures	Number of Angles Smaller than a Right Angle	Number of Angles Larger than a Right Angle
a.	2	1
b.	5	2
c.	9	3
d.	13	5

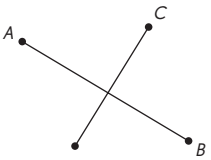
Chapter10

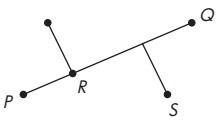
Lesson 10.1

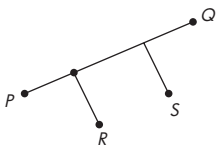
1. 

2. 

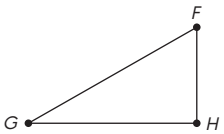
3. 

4. 

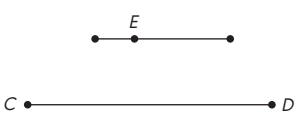
5. 

OR 

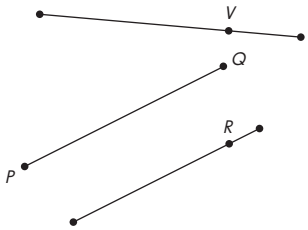
6. A triangle OR a right triangle



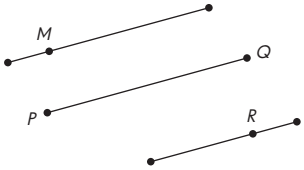
Lesson 10.2

1. 

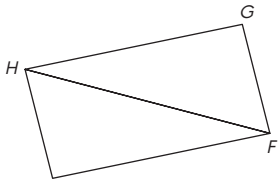
2. 

3. 

4. Yes

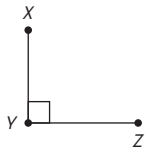


5. A rectangle



Lesson 10.3

1. Horizontal line segments: $\overline{SR}$; $\overline{PQ}$; $\overline{MK}$
2. Vertical line segments: $\overline{SP}$; $\overline{RQ}$; $\overline{MN}$
3. Horizontal line segments: $\overline{AB}$; $\overline{FE}$
   Vertical line segments: $\overline{AF}$; $\overline{BC}$
4. Horizontal line segments: $\overline{LM}$; $\overline{ON}$
   Vertical line segments: $\overline{LK}$; $\overline{MN}$
5. Horizontal line segments: $\overline{QR}$; $\overline{PV}$
   Vertical line segments: $\overline{UV}$; $\overline{RS}$
6. 

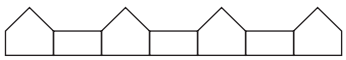
7. 

8. A vertical line segment is always perpendicular to a horizontal line segment if they are both drawn on the same sheet of paper.

Put On Your Thinking Cap!

1. Perpendicular line segments: $\overline{AB}$ and $\overline{EF}$; $\overline{AJ}$ and $\overline{EF}$; $\overline{AB}$ and $\overline{GH}$; $\overline{AJ}$ and $\overline{GH}$; $\overline{CD}$ and $\overline{EF}$; $\overline{CD}$ and $\overline{GH}$

2. Parallel line segments: $\overline{AB}$ and $\overline{CD}$; $\overline{EF}$ and $\overline{GH}$; $\overline{KL}$ and $\overline{YZ}$; $\overline{IJ}$ and $\overline{ML}$
3. 12th Street
4. 8th Street, Houston Street, and 5th Avenue
5. 15th Avenue, 8th Street, 5th Avenue, and Houston Street
6. 20 right angles



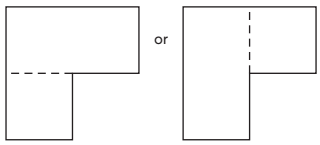
7. 32 right angles
   Pattern: Add 6 matchsticks each time.
   OR Each figure has 6 more matchsticks.
8.

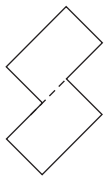
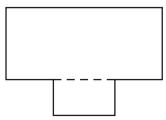
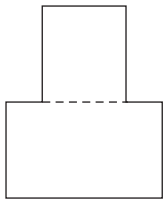
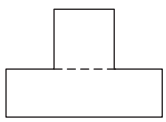
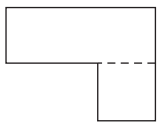
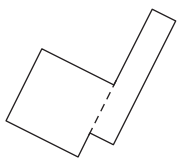
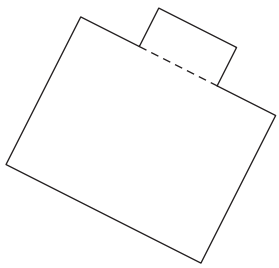
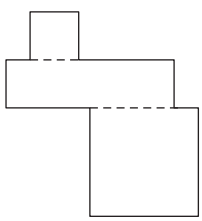
Figure	1	2	3	4	5	6	7	8	9	10
No. of Right Angles	2	8	14	20	26	32	38	44	50	56

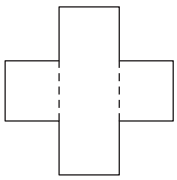
9. $2 + 6 \times (20 - 1)$
   $= 2 + 6 \times 19$
   $= 116$ right angles
10. $2 + 6 \times (n - 1)$ right angles
    OR $(6n - 4)$ right angles

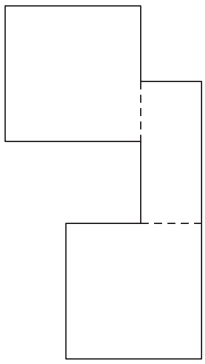
Chapter 11

Lesson 11.1

1. 4
2. 4
3. 2
4. square
5. 4
6. equal OR parallel
7. 2
8. rectangle
9. 0
10. equal OR parallel
11. 2
12. No. There are four right angles in a rectangle.
13. 0
14. 4
15. 2
16. No. There are four right angles in a square.
17. 0
18. 1
19. No. There are four right angles in a rectangle.
20. 6
21. 3
22. 6
23. 6
24. 

25. 
26. 
27. 
28. 
29. 
30. 
31. 
32. 

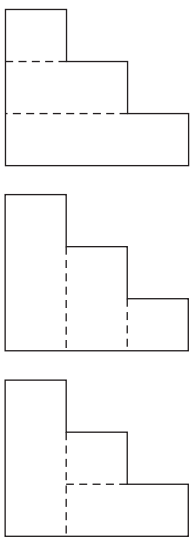
33. 

34. 

Lesson 11.2

1. 52°
2. 26°
3. 58°
4. 45°
5. $HG = 11$ cm; $DE = 4$ cm
6. $ST = 16$ cm; $RS = 14$ cm
7. $AJ = 19$ cm; $HG = 17$ cm

Put On Your Thinking Cap!

1. There are fifteen 1×1 squares, eight 2×2 squares, and three 3×3 squares.
   $15 + 8 + 3 = 26$ squares
2. 11
3. 5 cm
4. 

Test Prep for Chapters 7 to 11

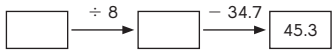
Multiple Choice

1. A
2. B
3. D
4. B
5. D
6. D
7. C
8. B
9. D
10. B

Short Answer

11. $\overline{HG}//\overline{NM}$; $\overline{CD} \perp \overline{HG}$ or $\overline{CD} \perp \overline{NM}$
12. 55
13. 26
14. 0.06
15. $5\frac{3}{4}$
16. 14.03
17. 3.6
18. 3.8
19. 134.6 centimeters
20. $10.60

Extended Response

21. 

    $45.3 + 34.7 = 80$
    $80 \times 8 = 640$
    The number is 640.
22. 1.88 m + 2.45 m = 4.33 meters
    10.00 m − 4.33 m = 5.67 meters
    Nicole has 5.67 meters of ribbon left.
23. 14.2 − 8.3 = 5.9 kilograms
    10.7 − 5.9 = 4.8 kilograms
    The mass of Parcel B is 4.8 kilograms.

Chapter 12

Lesson 12.1

1. 680
2. 543
3. 2,812
4. 806

5. 1,507
6. 1 m 85 cm
7. 3 m 12 cm
8. 7 m 8 cm
9. 9 m 5 cm
10. 12 m 3 cm
11. 8,000
12. 4,350
13. 7,900
14. 5,010
15. 2,095
16. 7,009
17. 3,005
18. 5 km
19. 6 km 340 m
20. 1 km 896 m
21. 2 km 65 m
22. 7 km 80 m
23. 4 km 2 m
24. 2 km 8 m

Lesson 12.2

1. 6,000
2. 3,438
3. 8,260
4. 4,050
5. 5,095
6. 7,005
7. 9,008
8. 3 kg
9. 2 kg 850 g
10. 3 kg 80 g
11. 7 kg 55 g
12. 8 kg 5 g
13. 12 kg 9 g
14. 80
15. 192
16. 138
17. 172
18. 120
19. 149
20. 4 lb
21. 5 lb 4 oz
22. 5 lb 15 oz
23. 7 lb 8 oz
24. 9 lb 6 oz
25. 3,250 mL
26. 4,600 mL
27. 2,080 mL
28. 6,070 mL
29. 1,009 mL
30. 5,006 mL
31. 1 L 800 mL
32. 2 L 130 mL
33. 3 L 50 mL
34. 4 L 90 mL
35. 6 L 0 mL
36. 5 L 8 mL

Lesson 12.3

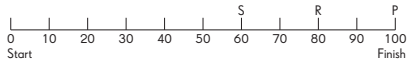
1. 120
2. 90
3. 265
4. 306
5. 618
6. 3 h
7. 3 h 30 min
8. 6 h 15 min
9. 6 h 5 min
10. 8 h 8 min

Lesson 12.4

1. 2 units = 110 cm + 130 cm = 240 cm
   1 unit = 240 cm ÷ 2 = 120 cm = 1 m 20 cm
   The length of Rope Q is 1 m 20 cm.
2. 4 units = 3,160 g − 2,040 g = 1,120 g
   1 unit = 1,120 g ÷ 4 = 280 g
   10 units = 280 g × 10 = 2,800 g
   3,160 g − 2,800 = 360 g
   The mass of the empty box is 360 g.
3. 2 units = 1,820 mL − 860 mL = 960 mL
   1 unit = 960 mL ÷ 2 = 480 mL
   The capacity of Cylinder C is 480 mL.
4. 1 h + 15 min + 15 min = 1 h 30 min
   Pei Lin jogged for 1 h 30 min
5. Peggy reached her destination at 3:10 P.M.
6. The movie started at 4:30 P.M.

Put On Your Thinking Cap!

100 m − 20 m = 80 m
100 m − 40 m = 60 m
When Pansy was at 100 m, Rita was at 80 m and Susan was at 60 m.



For every 80 m that Rita ran, Susan ran 60 m.
For every 8 m that Rita ran, Susan ran 6 m.
For every 4 m that Rita ran, Susan ran 3 m.
So when Rita ran 4 × 5 = 20 m to complete the race, Susan ran 3 × 5 = 15 m.
Hence, when Rita complete the race, Susan was at 60 m + 15 m = 75 m.
100 m − 75 m = 25 m
Rita beat Susan by 25 m.

Chapter 13

Lesson 13.1

1. 2; 5; 2 × 5 = 10; 10; 10
2. 1; 7; 1 × 7 = 7; 7; 7
3. 6; 3; 6 × 3 = 18; 18; 18
4. 4 × 4; 16; 16
5. 12 × 6; 72; 72
6. 18; 20
7. 34; 70
8. 32; 64
9. 30; 54
10. Area = 20 × 8 = 160 m^2
11. Area = 10 × 4 = 40 m^2
12. Area of wrapping paper = 60 × 9
    = 540 cm^2
    Area of wrapping paper used for gift = 540 ÷ 2
    = 270 cm^2
    Area of leftover paper = 540 − 270
    = 270 cm^2
13. Length of each square table = 12 ÷ 4 = 3 ft
    Area of each square table = 3 × 3 = 9 ft^2
14. Perimeter of garden = 15 × 2 + 22 × 2
    = 30 + 44 = 74 m
    Cost of putting up a fence = 74 × $10
    = $740
15. 5 to 6 $unit^2$

16. 7 to 8 unit^2
17. 9 to 10 unit^2
18. 7 to 8 unit^2
19. 14 to 15 unit^2
20. 12 to 13 unit^2

Lesson 13.2 (Part 1)

1. $8 + 4 + 8 + 4 = 24$ cm; 24
2. $4 \times 7 = 28$ in.; 28
3. $64 \div 4 = 16$ in.
4. $40 \div 4 = 10$ cm
5. $100 \div 2 = 50$ cm
   $50 - 18 = 32$ cm
6. $108 \div 2 = 54$ cm
   $54 - 36 = 18$ cm

Lesson 13.2 (Part 2)

1. $13 \times 5 = 65$ ft^2; 65
2. $3 \times 3 = 9$ cm^2; 9
3. $126 \div 9 = 14$ yd
4. $9 \times 9 = 81$ m^2
   Length of one side of the square is 9 meters.
5. a. $12 \times 12 = 144$ cm^2
      Length of each side of the poster is 12 centimeters.
   b. Perimeter $= 12 \times 4 = 48$ cm
6. a. Width $= 200 \div 20 = 10$ cm
   b. Perimeter $= 20 \times 2 + 10 \times 2$
      $= 40 + 20 = 60$ cm
7. a. Length $= 240 \div 15 = 16$ yd
   b. Perimeter $= 16 \times 2 + 15 \times 2$
      $= 32 + 30$
      $= 62$ yd
8. a. $11 \times 11 = 121$ m^2
      Length of each side of the pond is 11 meters.
   b. Perimeter $= 11 \times 4 = 44$ m
9. a. $52 \div 2 = 26$ cm
      Length $= 26 - 10 = 16$ cm
   b. Area $= 16 \times 10 = 160$ cm^2
10. a. $54 \div 2 = 27$ in.
      Length $= 2$ units
      Width $= 1$ unit
      3 units $= 27$ in.
      1 unit $= 27 \div 3 = 9$ in. (Width)
      2 units $= 9 \times 2 = 18$ in. (Length)
    b. Area $= 18 \times 9 = 162$ in.^{2}

Lesson 13.3

1. 4; 6; 14; 58
2. 7; 8; 20; 70
3. 54
4. 28
5. Area $= 8 \times 8 + 8 \times 3 = 64 + 24 = 88$ in.^{2}
6. Area $= 4 \times 3 + 6 \times 8 = 12 + 48 = 60$ yd^2
7. Area $= 10 \times 6 + 3 \times 7 = 60 + 21 = 81$ ft^2
8. Area $= 1 \times 1 + 6 \times 3 + 3 \times 2$
   $= 1 + 18 + 6 = 25$ m^2

Lesson 13.4

1. a. 15 m^2 to 17 m^2
   b. $3 \times 5 = 15$ m^2 (insufficient)
      $3 \times 6 = 18$ m^2
   Length of wallpaper needed is 6 meters.
2. a. 8 m^2 to 10 m^2
   b. $8 \times \$10 = \$80$
3. $12 \times 7 = 84$ in.^{2}
   $84 + 87 = 171$ in.^{2}
   171 in.^{2}
4. $28 \times 28 = 784$ ft^2
   $16 \times 16 = 256$ ft^2
   $784 - 256 = 528$ ft^2
   528 ft^2
5. Area of whole figure $= 8 \times 7 + 8 \times 14$
   $= 56 + 112 = 168$ m^2
   Area of unshaded figure $= 168 - 39$
   $= 129$ m^2
6. Area of large rectangle $= 17 \times 10$
   $= 170$ yd^2
   Area of small rectangle $= 15 \times 8$
   $= 120$ yd^2
   Area of path $= 170 - 120 = 50$ yd^2
7. a. Area of each square $= 405 \div 5$
   $= 81$ in.^{2}
   b. Length of each square is 9 inches.
   Perimeter of figure $= 9 \times 12 = 108$ in.
8. a. Area of table $= 2 \times 1 = 2$ m^2
   b. Perimeter of room $= 4 \times 2 + 3 \times 2$
   $= 8 + 6 = 14$ m

Put On Your Thinking Cap!

1. $384 \div 8 = 48$ in.
   $\frac{1}{4} \times 48 = 12$ cm
   a. $12 \times 8 = 96$ in.^{2}
   b. $8 + 12 + 48 + 8 + 12 + 48 = 136$ in.

2. Strategy: Draw a diagram.
Solution: The length of the 4 small squares
$= 4 \times 4 = 16$ in.
The length of the shaded square
$= 16 - 9 = 7$ in.
The area of the shaded square $= 7 \times 7$
$= 49$ in^2.
The shaded area is 49 square inches.

3. Strategy: Guess and check
Solution: $288 \div 9 = 32$ cm^2
Area of each rectangle is 32 cm^2.
Guess and check to find the width and length of each of the 9 identical rectangles. First, observe that the length of each rectangle is twice its width.
$32 = 1 \times 32$ (32 is not twice of 1)
$= 2 \times 16$ (16 is not twice of 2)
$= 4 \times 8$ (8 is twice of 4)
So, the width and length can only be 4 centimeters and 8 centimeters, respectively.
Width of the figure: $8 + 4 = 12$ cm
Length of the figure: $4 \times 6 = 24$ cm
Perimeter of the figure $= 24 + 12 + 24 + 12$
$= 72$ cm

Chapter 14

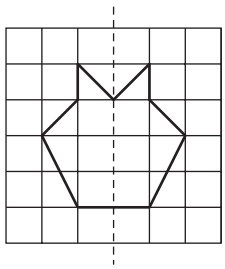
Lesson 14.1

1. Yes
2. Yes
3. No
4. Yes
5. No
6. No
7. Yes
8. Yes
9. Yes
10. No
11. No
12. No
13. Yes
14. Yes
15. Yes
16. Yes
17. Yes
18. No
19. Yes
20. No
21. Yes
22. Yes
23. Yes
24. No
25. Yes
26. No

Lesson 14.2

1. Yes
2. No
3. Yes
4. No
5. Yes
6. Yes
7. Yes
8. No
9. Yes
10. Yes
11. No
12. No
13. No
14. No

Lesson 14.3

1.


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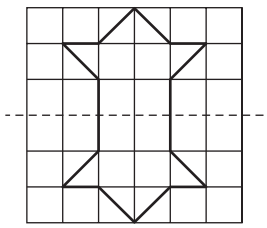

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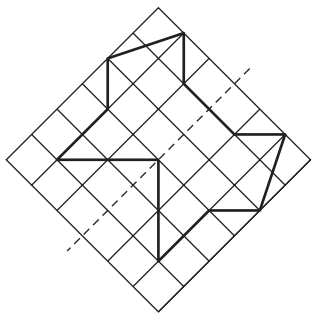

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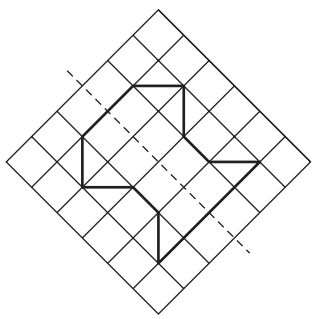

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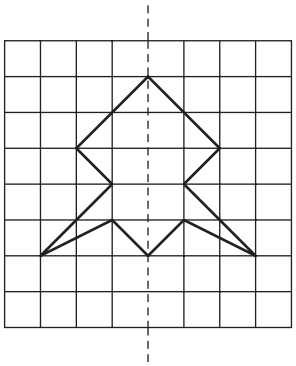

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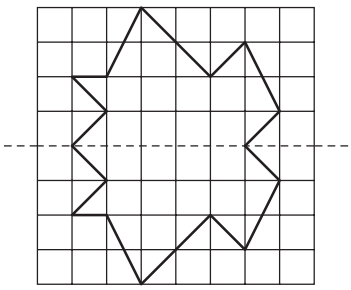

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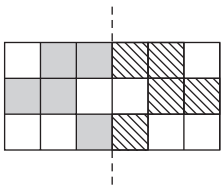
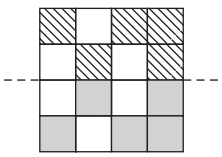


8.



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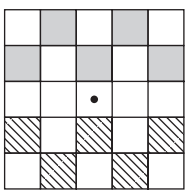

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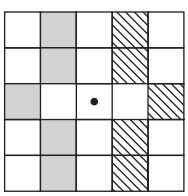
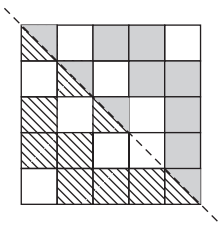
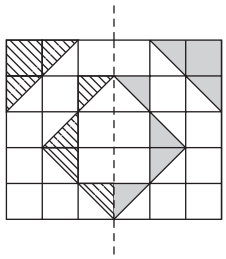


Put On Your Thinking Cap!

1.

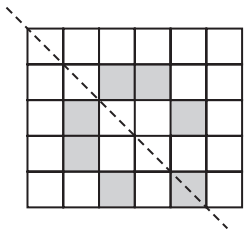


2.

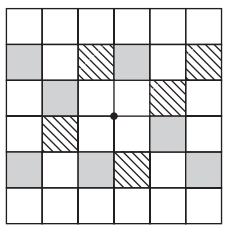


3. Accept any possible answer.

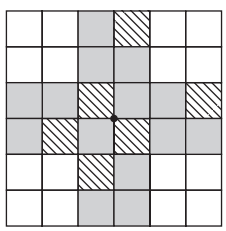
4.



5. Answers vary. Sample:



6. Answers vary. Sample:

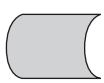


Chapter 15

Lesson 15.1

1.

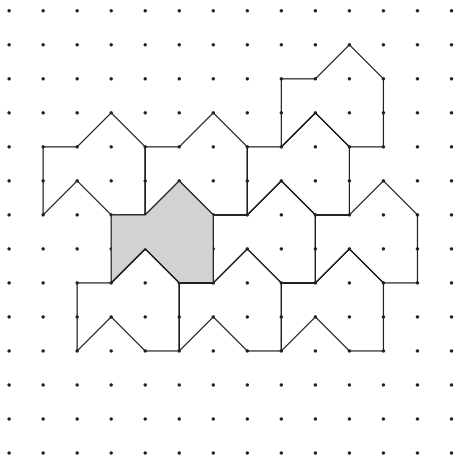
2.



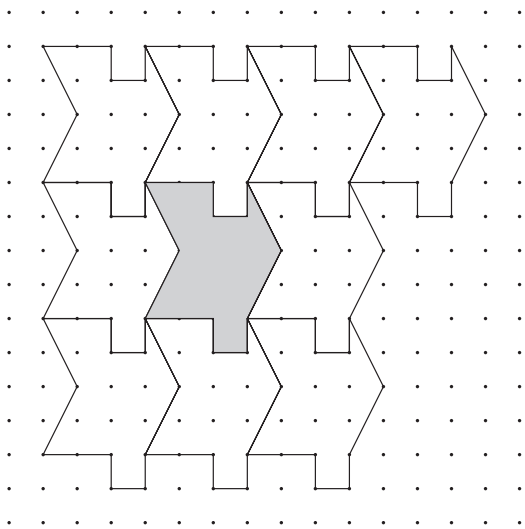
3.

4. Yes. It is made up of a single repeated shape. The repeated shapes do not have gaps between them nor do they overlap.
5. No. There are gaps between the repeated shapes.
6. No. the repeated shapes overlap.

7.



8.



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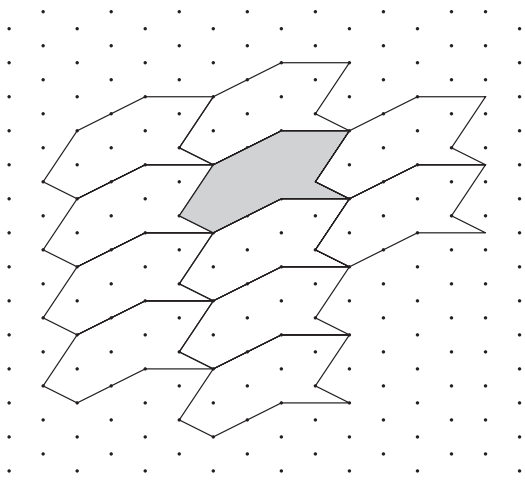

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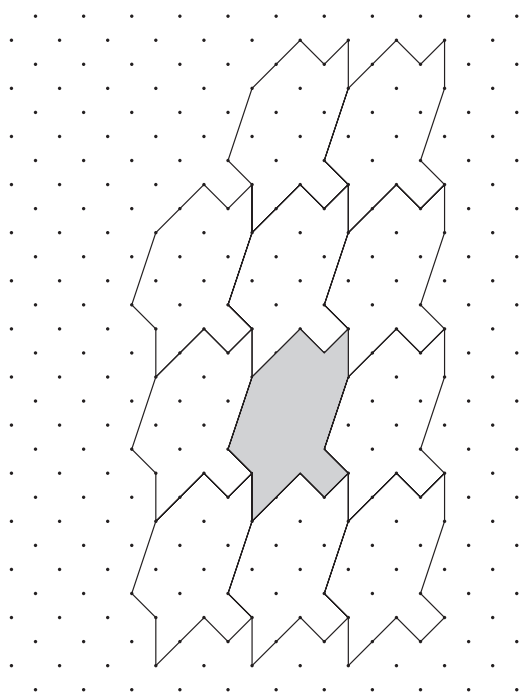

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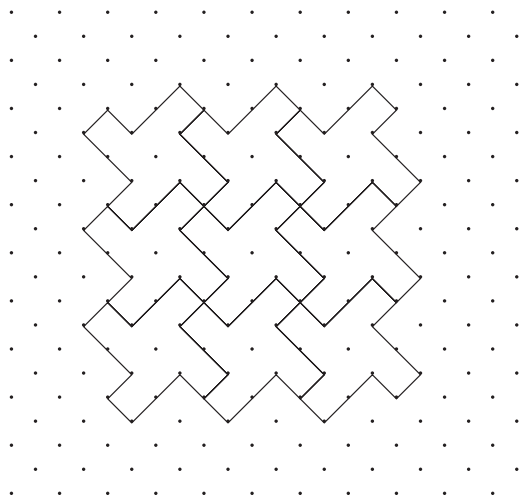

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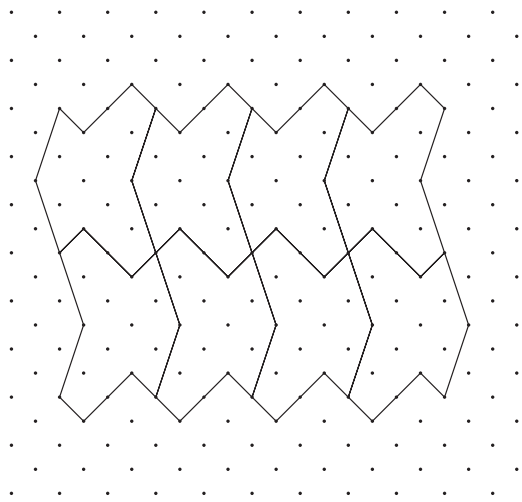
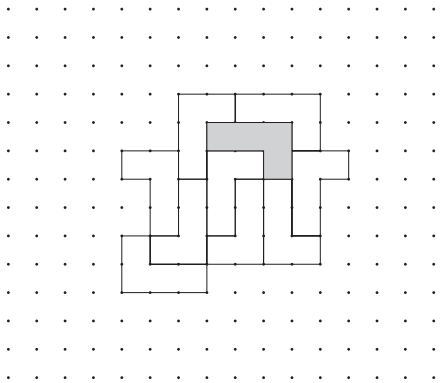


13. Answers vary. Sample:



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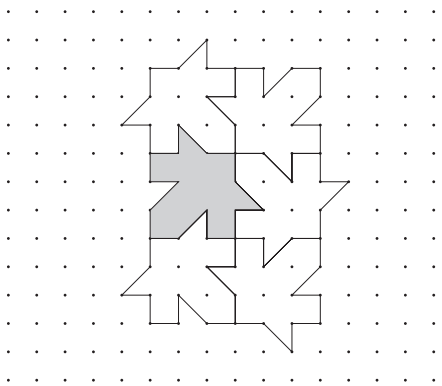
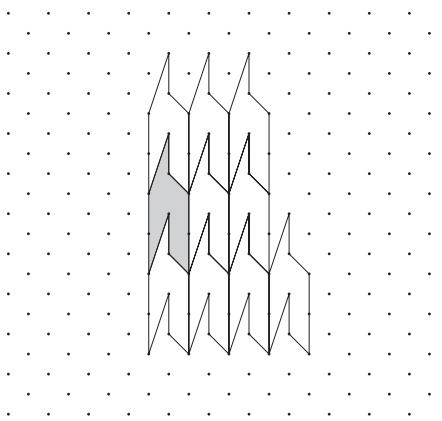


Lesson 15.2

1.



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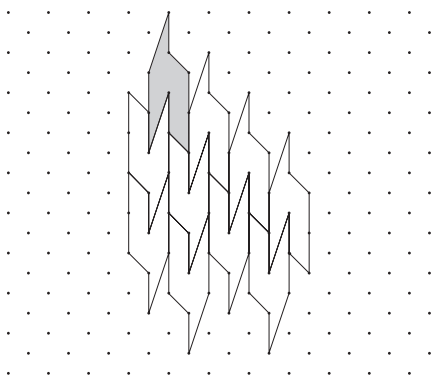
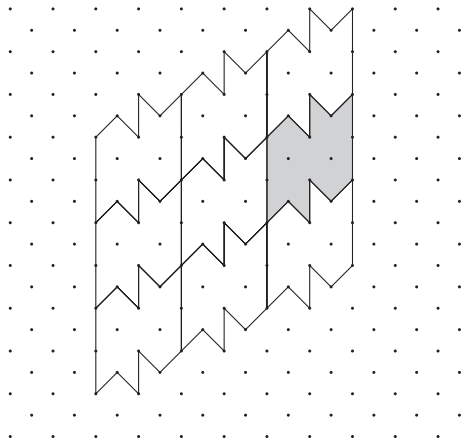


.3.



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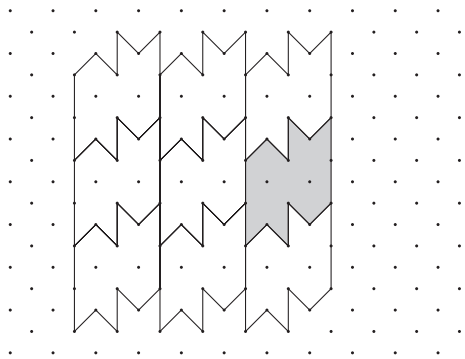

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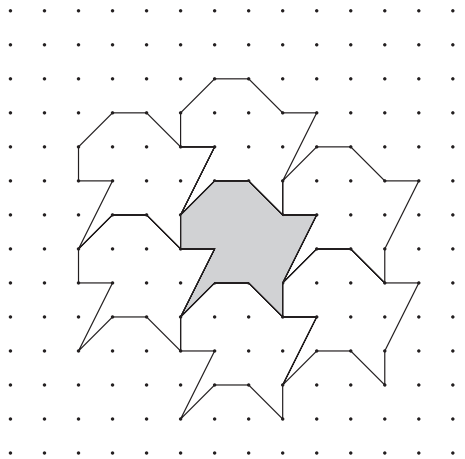
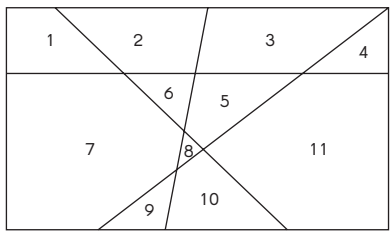


Put On Your Thinking Cap!

1. Accept any correct tessellation.
2. Thinking Skill: Transformation
   Strategy: Repeated patterns



3. Thinking Skill: Identifying patterns and relationships

Strategy: Look for a pattern

Number of lines	Maximum number of sections obtained	Pattern observed	
1	2	$1 + 1 = 2$	$1 + \frac{1 \times 2}{2} = 2$
2	4	$1 + 1 + 2 = 4$	$1 + \frac{2 \times 3}{2} = 4$
3	7	$1 + 1 + 2 + 3 = 7$	$1 + \frac{3 \times 4}{2} = 7$
4	11	$1 + 1 + 2 + 3 + 4 = 11$	$1 + \frac{4 \times 5}{2} = 11$
5	16	$1 + 1 + 2 + 3 + 4 + 5 = 16$	$1 + \frac{5 \times 6}{2} = 16$
6	22	$1 + 1 + 2 + 3 + 4 + 5 + 6 = 22$	$1 + \frac{6 \times 7}{2} = 22$

End-of-Year Test

Multiple Choice

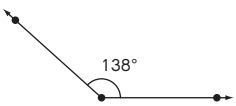
1. C
2. A
3. C
4. B
5. C
6. A
7. D
8. C
9. C
10. C
11. A
12. D
13. C
14. C
15. D
16. B
17. A
18. D
19. C
20. D

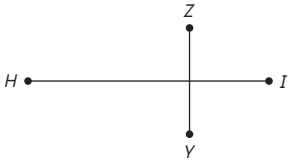
Short Answer

21. 21.60, 21.06, 20.60, 20.06

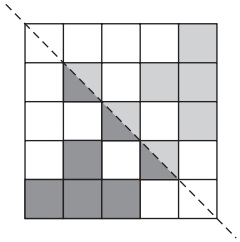
22. a. 26
    b. 27

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

24. 

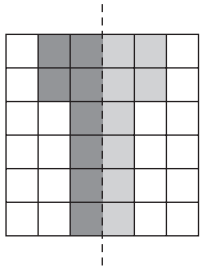
25. 

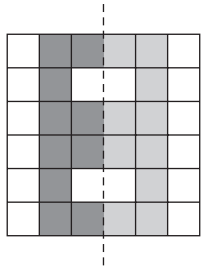
26. 16.8

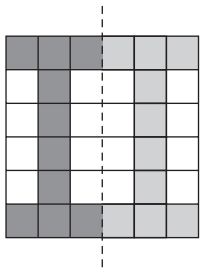
27. 

28. 6.38

29. 45

30. 

31. 

32. 

33. $90 \div 6 = 15$
    $64 \div 6 \approx 10$
    $15 \times 10 = 150$ squares

34. 3

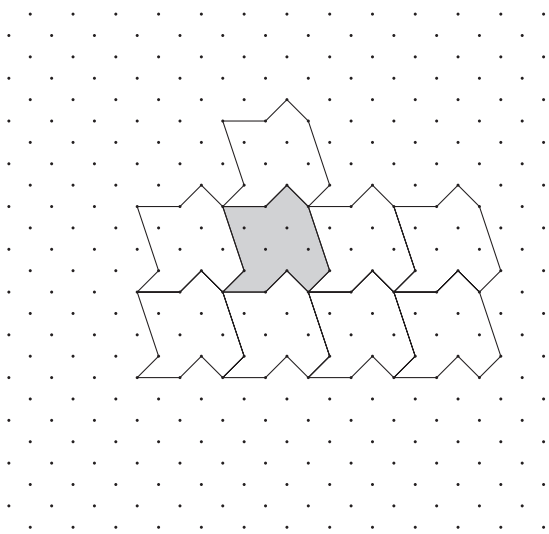
35. 48

36. 44°

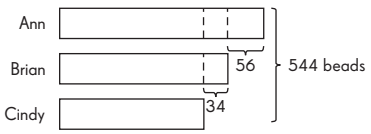
37. Jason

38. 14

39. 13

40. 

Extended Response

41. 

544 − 34 − 34 − 56 = 420
420 ÷ 3 = 140 beads (Cindy)
140 + 34 + 56 = 230 beads (Ann)
Ann has 230 beads.

42. 24 ÷ 4 = 6 centimeters
42 − 6 × 2 = 30 centimeters
30 ÷ 2 = 15 centimeters
Length of the rectangle is 15 centimeters.

43. 16 × 4 = 64 ft
64 − 19 × 2 = 26 ft
26 ÷ 2 = 13 ft
19 × 13 = 247 ft^2
Area of the rectangle is 247 ft^2.

44. 25 × 20 = 500 m^2; 23 × 18 = 414 m^2
a. 500 m^2 − 414 m^2 = 86 m^2
b. 86 × $27 = $2,322

45. Make a list of multiplies of 4:
4, 8, 12, 16, 20, 24, 28, 32, 36
20 + 32 = 52
Side length of smaller square
= 20 cm ÷ 4 = 5 cm
Side length of larger square
= 32 cm ÷ 4 = 8 cm
5 cm × 5 cm = 25 cm^2
8 cm × 8 cm = 64 cm^2
64 cm^2 − 25 cm^2 = 39 cm^2
The area of the shaded part is 39 cm^2.
OR
24 + 28 = 52
Side length of smaller square
= 24 cm ÷ 4 = 6 cm
Side length of larger square
= 28 cm ÷ 4 = 7 cm
6 cm × 6 cm = 36 cm^2
7 cm × 7 cm = 49 cm^2
49 cm^2 − 36 cm^2 = 13 cm^2
The area of the shaded part is 13 cm^2.
OR
16 + 36 = 52
Side length of smaller square
= 16 cm ÷ 4 = 4 cm
Side length of larger square
= 36 cm ÷ 4 = 9 cm
4 cm × 4 cm = 16 cm^2
9 cm × 9 cm = 81 cm^2
81 cm^2 − 16 cm^2 = 65 cm^2
The area of the shaded part is 65 cm^2.