Course 3 Unit 3 Practice

LESSON 16-1

1. Determine the complement and/or supplement of each angle.

   a. $15°$

   b. $37°$

   c. $71°$

   d. $63°$

   e. $x°$

2. The measure of an angle and its compliment are given. Determine the measures of the two angles.

   a. $x°$ and $(2x + 12)°$

   b. $(x + 5)°$ and $(3x - 1)°$

   c. $(2x)°$ and $(3x)°$

   d. $(3x)°$ and $(2x - 5)°$

   e. $(x - 7)°$ and $(2x + 1)°$

3. The measure of an angle and its supplement are given. Determine the measures of the two angles.

   a. $x°$ and $(x + 35)°$

   b. $(3x)°$ and $(x - 18)°$

   c. $(2x - 9)°$ and $(4x + 27)°$

   d. $(3x + 7)°$ and $(2x - 17)°$

   e. $7x°$ and $(62 - 2x)°$

4. Model with mathematics. Draw a pair of complimentary angles that are not adjacent.

5. The measure of angle A is $(2x)°$, and the measure of its supplement, angle B, is $(x - 6)°$. What is the measure of each angle?

   A. $32°; 58°$

   B. $58°; 122°$

   C. $62°; 118°$
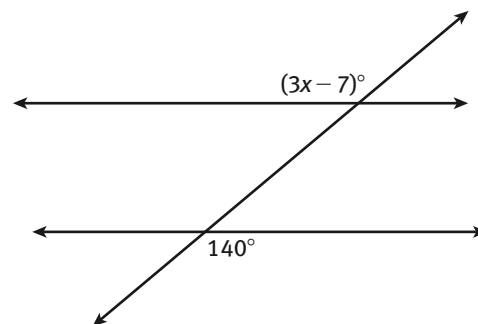
   D. $80°; 160°$

LESSON 16-2

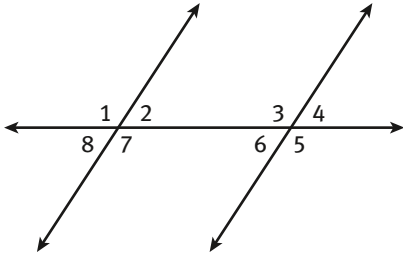**6.** In the diagram, $\overline{JC} \parallel \overline{SO}$. Complete the table to find the missing angle measures.
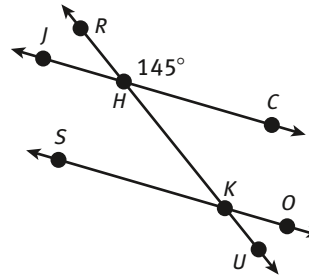
Angle	Measure
$\angle RHC$	$145°$
$\angle JHK$	
$\angle RHJ$	
$\angle CHK$	
$\angle HKS$	
$\angle SKU$	
$\angle OKU$	
$\angle HKO$	

7. Refer to the drawing above.

   a. What is the sum of the angle measures of $\angle JHK$ and $\angle HKS$?

   b. Attend to precision. Identify angles JHK and HKS. Explain.

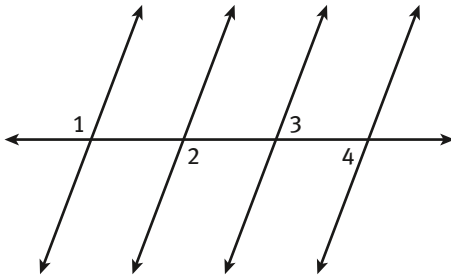**8.** The figure shows parallel lines cut by a transversal. Find the value of x.

   A. $44.\overline{3}$

   B. 49

   C. 131

   D. 147

9. The figure shows parallel lines cut by a transversal.
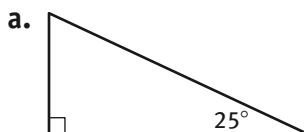

  a. Why is $\angle 1 \cong \angle 3$?

  b. Why is $\angle 2 \cong \angle 8$?

  c. Why is $\angle 1 \cong \angle 5$?

  d. Why are $\angle 3$ and $\angle 6$ supplementary angles?

  e. Why is $\angle 2 \cong \angle 6$?

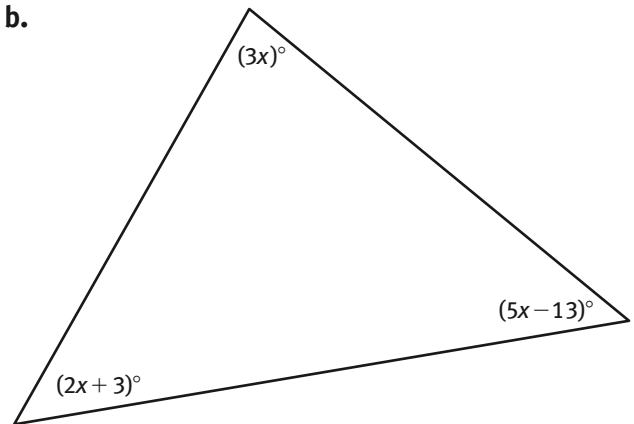**10. Make sense of problems.** The figure shows four parallel lines cut by a transversal.

  a. If $m\angle 1 = 118°$, find $m\angle 4$.

  b. If $m\angle 2 = (2x + 12)°$ and $m\angle 4 = (5x)°$, find the value of x.

LESSON 17-1
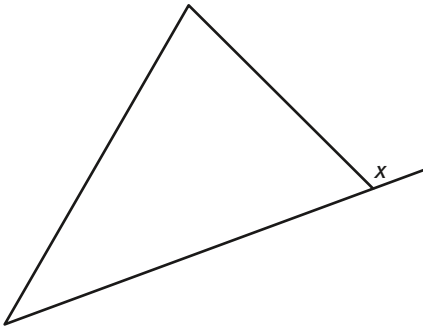
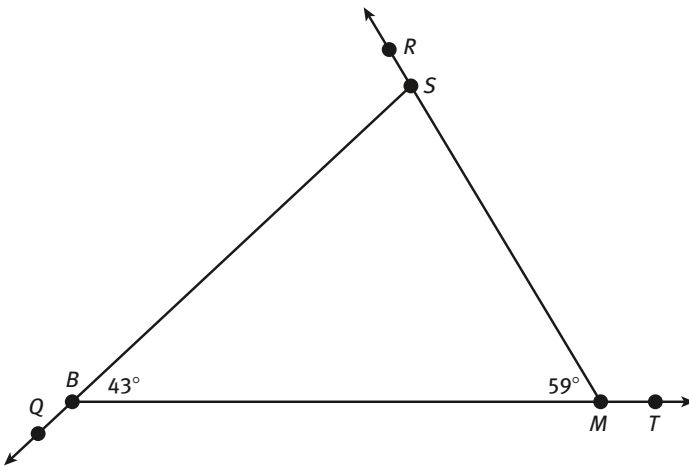**11.** Determine the measure of the unknown angle(s).

  a.

b.

12. The measures of two angles of a triangle are shown. Find the measure of the third angle of the triangle.

  a. $20°, 80°$

  b. $35°, 95°$

  c. $60°, 60°$

  d. $18°, 112°$

  e. $39°, 76°$

13. The measures of the three angles of a triangle are given. Find the measures of each angle in each triangle.

  A. $x°, (x + 26)°, (x - 2)°$

  B. $x°, (x - 25)°, (3x - 20)°$

  C. $x°, (2x + 15)°, (4x - 10)°$

  D. $(3x)°, (5x - 12)°, (5x + 18)°$

  E. $2x°, 5x°, (4x - 7)°$

14. Make sense of problems. In $\triangle ABC$, the measure of $\angle A$ is twice the measure of $\angle B$. The measure of $\angle C$ is 5 less than $\angle A$. What are the measures of the angles of $\triangle ABC$?

  A. $22°, 61°, 97°$

  B. $35°, 65°, 70°$

  C. $37°, 69°, 74°$

  D. $40°, 50°, 90°$

15. The vertex angle of an isosceles triangle measures $108°$. What is the measure of the base angles?

LESSON 17-2

16. Find the measure of the exterior angle x of each triangle given the measures of the two remote interior angles.

   a. $40°, 60°$

   b. $55°, 100°$

   c. $67°, 20°$

   d. $38°, 70°$

   e. $19°, 127°$

17. Make sense of problems and persevere in solving them. An exterior angle has been drawn at each of the three vertices of $\triangle SBM$. Determine the measure of each of the three exterior angles. Explain.

18. Find the unknown angle measure(s) of each quadrilateral.

   a. $80°, 120°, 70°, x°$

   b. $75°, 60°, 125°, x°$

   c. $40°, 110°, x°, (3x + 10)°$

   **d.** $55°, 130°, x°, (x + 15)°$

   e. $90°, 140°, (x - 10)°, (x - 20)°$

19. The measure of the four angles for a quadrilateral are: $x°$, $(2x)°$, $(x + 10)°$, and $(3x)°$. Which are the measures of the four angles of the quadrilateral?

   A. $40°, 45°, 95°, 180°$

   B. $50°, 50°, 100°, 150°$

   C. $50°, 60°, 100°, 150°$

   D. $60°, 75°, 105°, 120°$

20. Critique the work of others. Two angles of a triangle are $55°$ and $105°$. Marion says that the third angle measure is $25°$. Bruce says that the third angle measure is $205°$. Determine which student is correct. Explain the error the other student made.
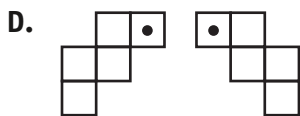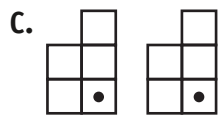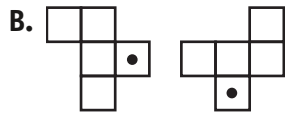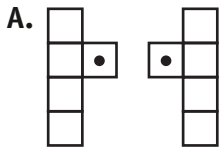
LESSON 18-1

In Items 21-23, each set of triangles shows the preimage and image of a triangle after a single transformation. Describe how the triangle was transformed using the proper name.

21.

22.

23.
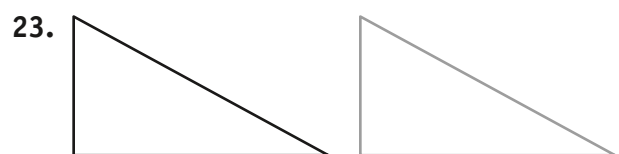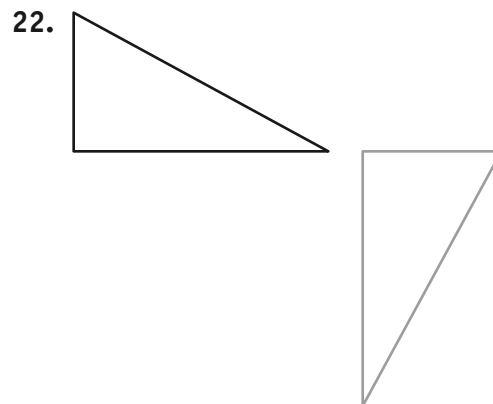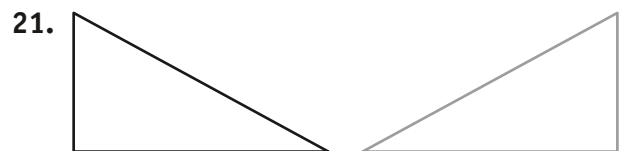
24. The illustration below shows the preimage and image of a single transformation of a triangle. Which transformation does this illustrate? Explain.
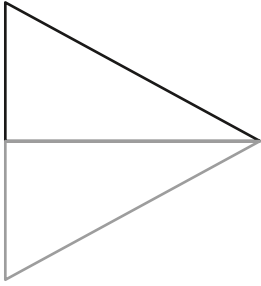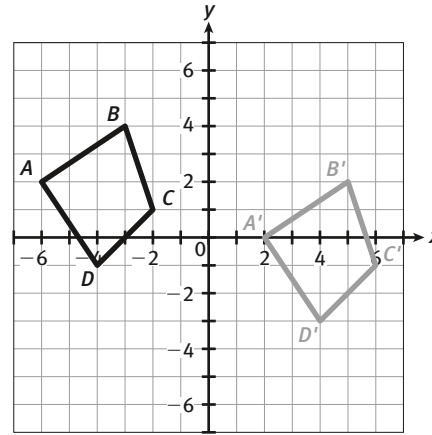
25. **Attend to precision.** Which illustration shows a rotation?

A.

B.

C.

D.

LESSON 18-2

26. The diagram shows a translation of quadrilateral *ABCD*.

a. Write a verbal description of the translation.

b. Show the translation using symbolic representation.

27. The symbolic representation of each translation is given. Write a verbal description of the translation.

a. $(x, y) \rightarrow (x, y - 3)$

b. $(x, y) \rightarrow (x + 5, y + 1)$

c. $(x, y) \rightarrow (x - 2, y)$

d. $(x, y) \rightarrow (x + 3, y - 2)$

28. Determine the coordinates of the vertices for each image of $\triangle GED$ after each of the following translations is performed.
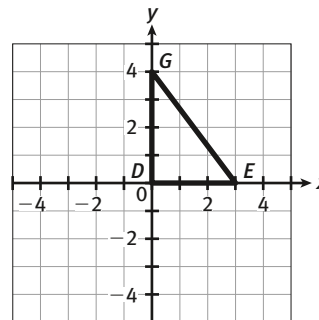
a. 2 units to the right and 3 units down

b. $(x, y) \rightarrow (x - 3, y)$

c. $(x, y) \rightarrow (x + 1, y - 1)$

d. $(x, y) \rightarrow (x - 4, y - 3)$

e. $(x, y) \rightarrow (x - 3, y - 4)$

29. The diagram shows a translation of $\triangle PQR$. Which describes the translation symbolically?
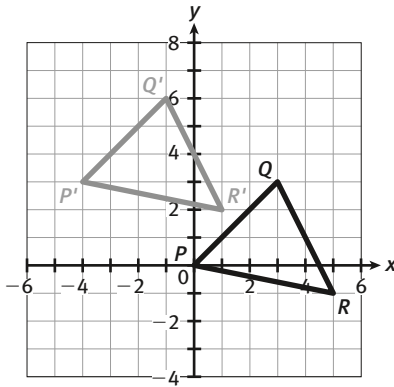
A. $(x, y) \rightarrow (x - 1, y + 6)$

B. $(x, y) \rightarrow (x, y + 3)$

C. $(x, y) \rightarrow (x + 3, y - 4)$

D. $(x, y) \rightarrow (x - 4, y + 3)$

30. Sketch the image of the triangle according to the translation $(x, y) \rightarrow (x - 2, y + 2)$.
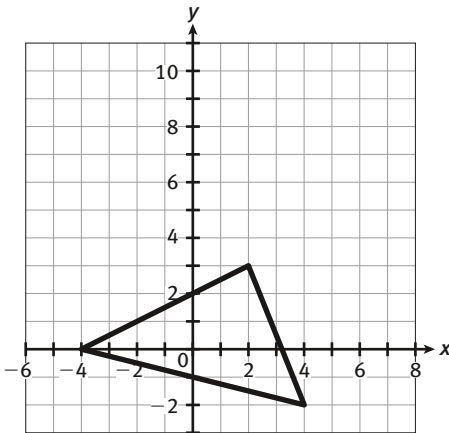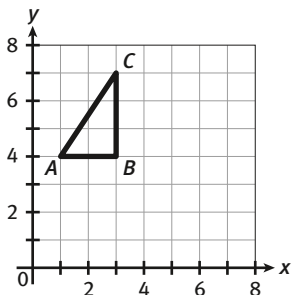

LESSON 18-3

31. Attend to precision. Triangle ABC is shown on the coordinate plane.

a. Draw the reflection of triangle ABC over the line $y = x$.

b. Complete the table.

Coordinates of $\triangle ABC$		Coordinates of $\triangle A'B'C'$	
A		A'	
B		B'	
C		C'	

c. Describe the reflection using symbolic notation.

32. The vertices of $\triangle PQR$ have coordinates $P(1, -2)$, $Q(3, 2)$, and $R(6, -1)$. The triangle is reflected over the y-axis. Which of the following are the coordinates of $\triangle P'Q'R'$?

A. $P'(-1, -2), Q'(-3, 2), R'(-6, -1)$

B. $P'(-2, 1), Q'(2, 3), R'(-1, 6)$

C. $P'(-1, 2), Q'(-3, -2), R'(-6, 1)$

D. $P'(1, 2), Q'(3, -2), R'(6, 1)$

33. The vertices of quadrilateral $JKLM$ are located at $J(-5, -2), K(-2, -2), L(-3, -5), M(-6, -5)$. Quadrilateral $JKLM$ is reflected over the x-axis. What are the coordinates of the image?

34. The vertices of $\triangle DEF$ have coordinates $D(2, 4)$, $E(6, 4)$, and $F(6, 7)$. The vertices of $\triangle D'E'F'$ have coordinates $D'(-2, 4), E'(-6, 4)$, and $F'(-6, 7)$.

a. What is the line of reflection?

b. Describe the reflection using symbolic representation.

35. Write a statement describing which coordinate stays the same when a figure is reflected over the x-axis.
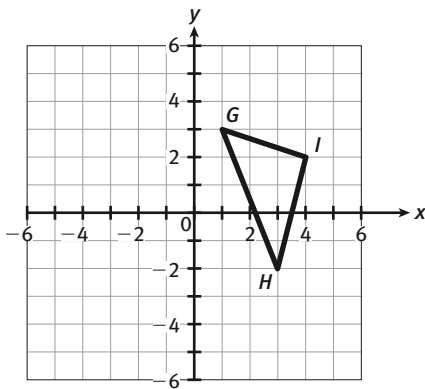
LESSON 18-4

36. The preimage of point A is located at $(-3, 2)$. Determine the coordinates of the image A' for each counterclockwise rotation.

a. $90°$

b. $180°$

c. $270°$

37. Which of the following is the symbolic representation of a 180° counterclockwise rotation?

A. $(x, y) \rightarrow (x, y)$

B. $(x, y) \rightarrow (y, -x)$

C. $(x, y) \rightarrow (-y, x)$

D. $(x, y) \rightarrow (-x, -y)$

38. Attend to precision. Triangle GHI is shown on the coordinate plane.

a. Draw the 180° counterclockwise rotation of triangle GHI about the origin.

b. Complete the table.

Coordinates of △GHI		Coordinates of △$G'H'I'$	
G		G'	
H		H'	
I		I'	

c. Describe the rotation using symbolic representation.

**39. Reason abstractly.** The vertices of $\triangle RST$ are located at $R(-3, 4)$, $S(2, 1)$, and $T(-2, -3)$.

a. Determine the coordinates of $R'S'T'$ after a 270° counterclockwise rotation about the origin.

b. Determine the coordinates of $R'S'T'$ after a 90° clockwise rotation about the origin.

c. What do you notice?

40. The coordinates of the vertices of $\triangle XYZ$ are $X(-1, 3)$, $Y(-4, 1)$, and $Z(1, -3)$. The coordinates of the vertices of the image are $X'(-3, -1)$, $Y'(-1, -4)$, and $Z'(3, -1)$.

a. Describe the rotation verbally.

b. Describe the rotation using symbolic notation.

LESSON 19-1

41. The coordinate plane shows $\triangle ABC$.
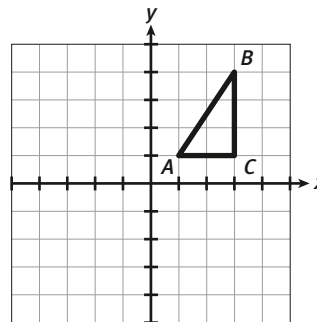
a. Draw a 90° counterclockwise rotation of $\triangle ABC$ about the origin. Label the vertices of the image.

b. Complete the table.

Coordinates of △ABC		Coordinates of △$A'B'C'$	
A		A'	
B		B'	
C		C'	

c. What are the lengths of the corresponding sides AC and $A'C'$, and BC and $B'C'$?

d. What is the area of $\triangle ABC$ and $\triangle A'B'C'$?

e. What can you determine about the corresponding sides of the preimage and image? What can you determine about the areas of the preimage and image? How do $\triangle ABC$ and $\triangle A'B'C'$ compare?

42. Draw and label $\triangle JKL$ having vertices $J(3, 8)$, $K(6, 1)$, and $L(3, 1)$. Perform each transformation on the coordinate plane.
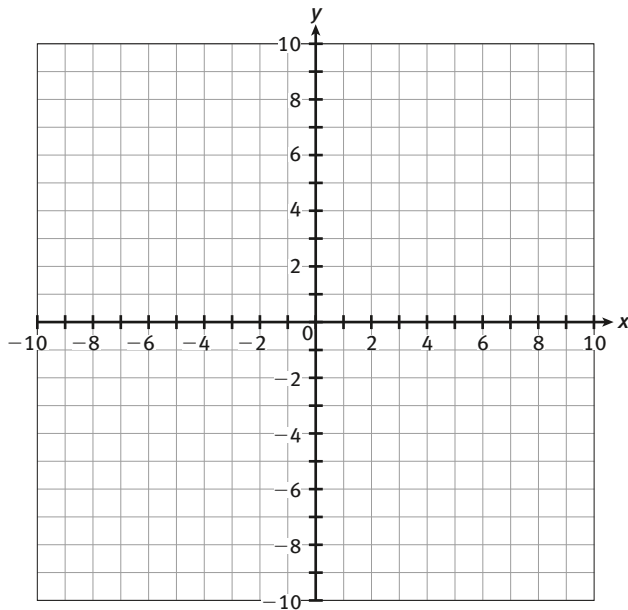

a. Reflect $\triangle JKL$ across the y-axis. Label the image $J'K'L'$.

b. Rotate $\triangle JKL$ 180° counterclockwise about the origin. Label the image $J''K''L''$.

c. Translate $\triangle JKL$ 5 units down. Label the image $J'''K'''L'''$.

d. Which of the transform images are congruent to $\triangle JKL$?

43. Which of the following statements is NOT true?

A. The corresponding angles of a translation are congruent.

B. The corresponding sides of a rotation get smaller.

C. The symbolic representation of a 180° counterclockwise rotation is $(x, y) \rightarrow (-x, -y)$.

D. The preimage and image of a reflection are congruent.

44. Quadrilateral $ABCD$ is reflected across line m as shown.
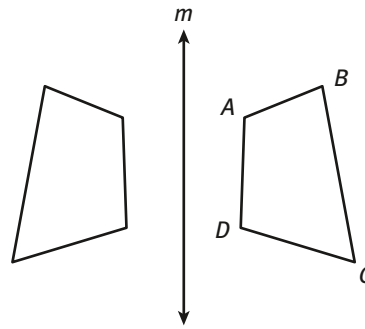
a. Label the vertices of the image.

b. Name the side that corresponds to side BC.

c. Name the angle that corresponds to $\angle D$.

d. How does the preimage and image compare? Explain.

45. List the transformations that change the location of a figure but do not change the size of the figure.

LESSON 19-2

46. The point $K(-5, 3)$ is rotated 90° and then reflected across the y-axis. What are the coordinates of K' and K''?

47. $\triangle PQR$ has vertices $P(-1, 6)$, $Q(-7, 8)$, $R(-5, 2)$. What are the coordinates of the images of $\triangle PQR$ after the following composite transformations?

a. $(x, y) \rightarrow (x + 3, y - 2)$ followed by $(x, y) \rightarrow (x - 1, y + 3)$

b. $(x, y) \rightarrow (x - 1, y + 1)$ followed by $(x, y) \rightarrow (x, -y)$

c. $(x, y) \rightarrow (y, x)$ followed by $(x, y) \rightarrow (-x, y)$

d. $(x, y) \rightarrow (y, -x)$ followed by $(x, y) \rightarrow (x, -y)$

48. Find the single counterclockwise rotation that has the same effect as the composition of the following rotations. $(x, y) \rightarrow (-y, x)$ followed by $(x, y) \rightarrow (y, -x)$. Describe the result.

49. Which is the transformation that has the same effect as the composition of the translation $(x, y) \rightarrow (x + 2, y - 3)$ followed by a reflection across the y-axis?

A. $(x, y) \rightarrow (x - 2, y - 3)$

B. $(x, y) \rightarrow (-x + 2, y - 3)$

C. $(x, y) \rightarrow (x + 2, y + 3)$

D. $(x, y) \rightarrow (-x - 2, y - 3)$

**50.** The coordinate plane shows $\triangle ABC$.
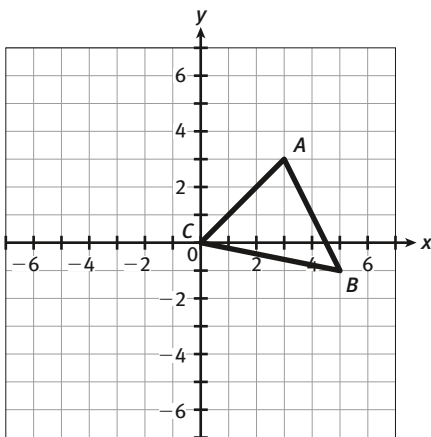
a. Draw the image of a reflection of $\triangle ABC$ across the line $y = x$ followed by a reflection of the triangle across the x-axis.

b. Write the symbolic representation of the single transformation that has the same effect of the composition.
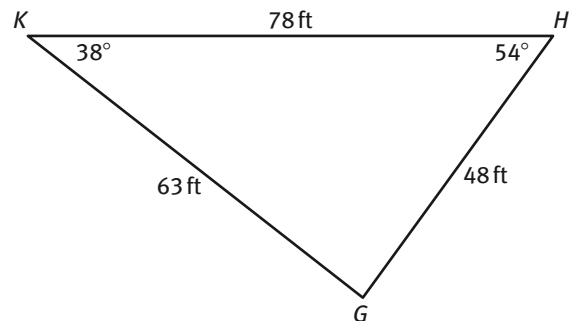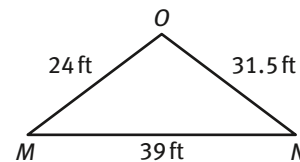
LESSON 20-1

51. Are the triangles similar? If so, explain why and write a similarity statement. If not, explain why not.
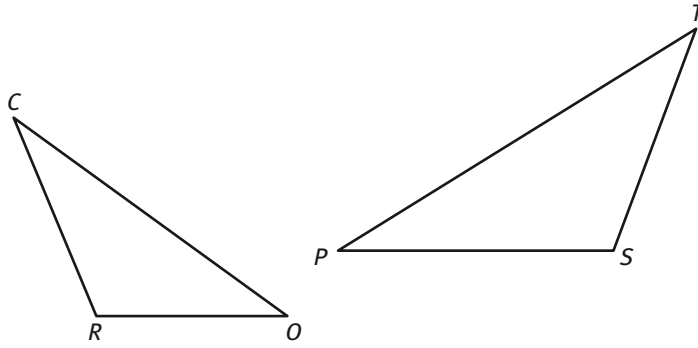
a.

b.

SpringBoard Course 3, Unit 3 Practice
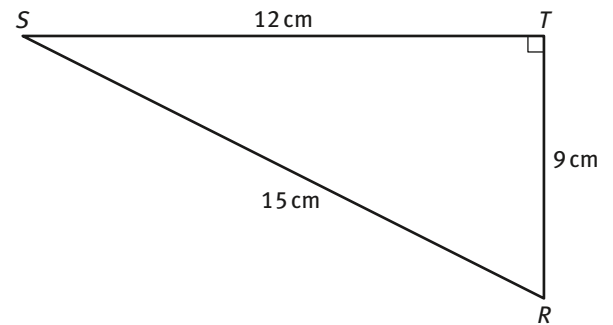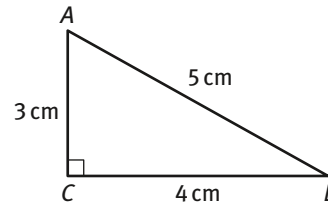
52. In the figure, $\triangle CRO \sim \triangle PST$.

Complete the following.

a. $m\angle C =$ _____
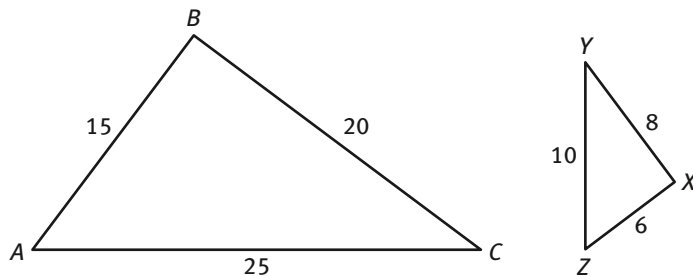
b. $\dfrac{RO}{ST} = \dfrac{CO}{}$

53. $\triangle DEF$ has side lengths 10 in., 24 in., and 26 in. What could be the side lengths of a triangle similar to $\triangle DEF$?

A. 5 in., 19 in., 21 in.

B. 9 in., 12 in., 15 in.

C. 15 in., 29 in., 31 in.

D. 15 in., 36 in., 39 in.

54. $\triangle CAT \sim \triangle DOG$.

a. Identify the corresponding angles.

b. Identify the corresponding sides.

55. $\triangle ABC \sim \triangle ZXY$.

Find the ratios of the corresponding sides.

LESSON 20-2

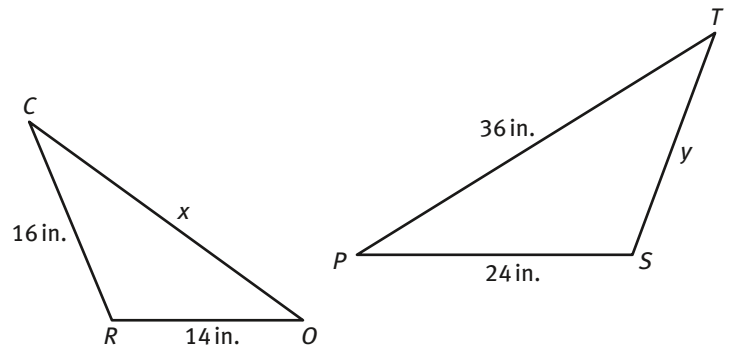**56.** $\triangle TWO \sim \triangle PEN$, $m\angle T = 35°$, and $m\angle T = 70°$. Find the measure of each of the following angles.

a. $m\angle W$
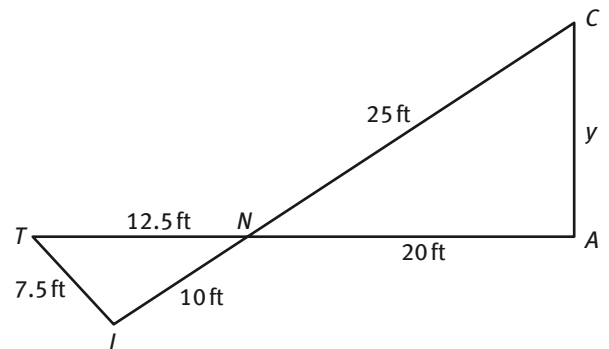
b. $m\angle O$

c. $m\angle P$

d. $m\angle N$

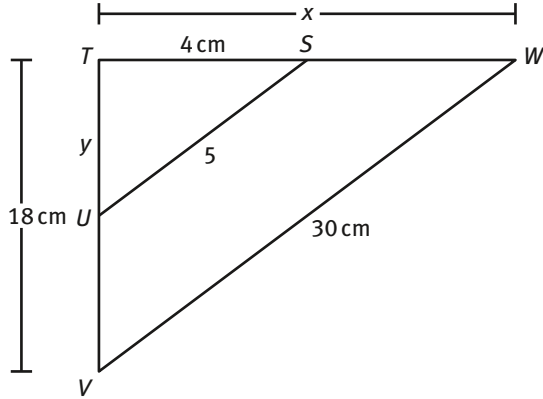**57.** The similarity statement for each pair of triangles is given. Find x and y.

a. $\triangle CRO \sim \triangle PST$

b. $\triangle TIN \sim \triangle CAN$

(9)

c. $\triangle TUS \sim \triangle TVW$

T ——4 cm—— S
x (top measurement)
y
5
18 cm U
30 cm
V
W

58. Make sense of problems. Raphael is 5 feet tall. He casts a 4-ft shadow. At the same time, a tree casts a 6-ft shadow. How much taller is the tree than Raphael?
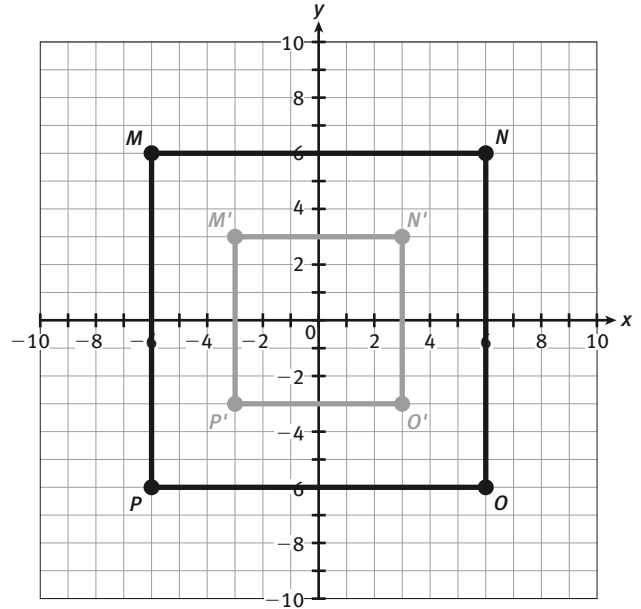
59. $\triangle FOX \sim \triangle WIN$. The scale factor of $\triangle FOX$ to $\triangle WIN$ is $\dfrac{5}{4}$. If FO is 30, what is WI?

60. $\triangle JKL \sim \triangle MNO$. $JK = 15$, $JL = 18$, $MN = 45$, and $MO = x + 4$. Which is the value of x?

A. 48

B. 50

C. 52

D. 54

LESSON 21-1

61. Model with mathematics. Square $MNOP$ and $M'N'O'P'$ are shown on the coordinate plane. The center of dilation is at the origin.

a. What is the ratio of the corresponding sides?

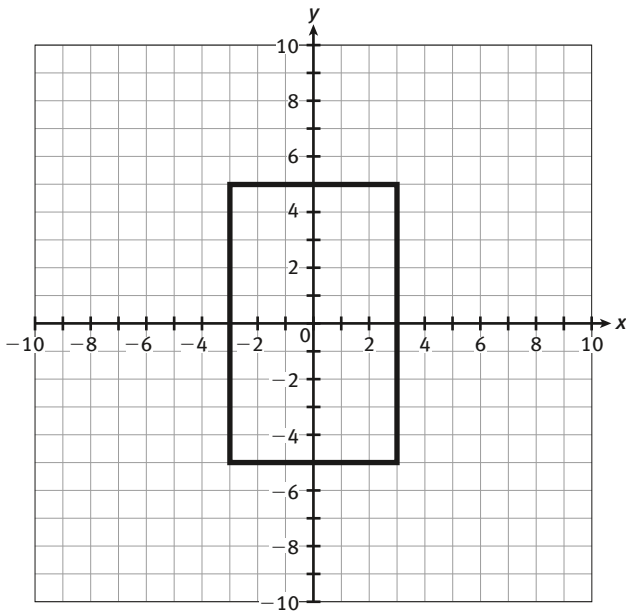**b.** What is the ratio of the perimeters?

c. What is the ratio of the areas?

62. Quadrilateral $FGHI$ is dilated. The ratio of the corresponding sides of the preimage and image is $\dfrac{2}{3}$. What is the ratio of the areas of the two quadrilaterals?

A. $\dfrac{2}{3}$

B. $\dfrac{4}{6}$

C. $\dfrac{4}{9}$

D. $\dfrac{3}{2}$

63. Figure *ABCD* is shown on the coordinate plane.

   a. Enlarge figure *ABCD* by a ratio of $\frac{2}{1}$.

   b. What is the area of the preimage?

   c. What is the area of the image?

   d. What is the ratio of the area of the image to the preimage?

64. Attend to detail. The ratio of the perimeter of pentagon *JKLMN* to pentagon $J'K'L'M'N'$ is $\frac{3}{4}$.

Is the image smaller or larger than the preimage? Explain.

65. The ratio of the area of $\triangle ABC$ to the area of $\triangle A'B'C'$ is $\frac{16}{9}$. What is the ratio of the corresponding sides of the two triangles? Write the ratio as a fraction.

LESSON 21-2

66. A triangle has vertices $(-4, 2)$, $(1, 6)$, and $(8, -2)$. If the triangle is dilated with a scale factor of 0.5, which of the following would be the vertices of the image?

   A. $(-8, 4)$, $(2, 12)$, and $(16, -4)$

   B. $(-2, 1)$, $(\frac{1}{2}, 3)$, and $(4, -1)$

   C. $(2, -4)$, $(6, 1)$, and $(-2, 8)$

   D. $(4, -2)$, $(-1, -6)$, and $(-8, -2)$

67. The perimeter of a polygon is 18 cm. The perimeter of its image after a dilation is 12 cm.

   a. What is the scale factor of the dilation?

   b. Describe the dilation. Explain.

   c. What is the ratio of the areas?

68. Understand the problems and persevere in solving them. The length and width of a rectangle *JKLM* are 7 ft and 3.5 ft. The rectangle is dilated to create rectangle $J'K'L'M'$ with a scale factor of 6.

   a. What is the perimeter of $J'K'L'M'$?

   b. What is the area of $J'K'L'M'$?

69. $\triangle ABC$ is dilated to $\triangle PQR$. The coordinates of point *B* are $(-6, 3)$. The coordinates of point *Q* are $(-2, 1)$. What is the scale factor for the dilation?

70. The legs of a right triangle *XYZ* are 5 cm and 12 cm. Triangle *XYZ* is dilated to triangle $X'Y'Z'$ by a scale factor of $\frac{2}{3}$. What is the area of triangle $X'Y'Z'$?

LESSON 22-1

71. Attend to precision. A right triangle has leg lengths of 3.4 cm and 6.7 cm. Which answer below shows the length of the triangle's hypotenuse rounded to the nearest tenth?

  A. 8.5 cm

  B. 7.5 cm

  C. 5.5 cm

  D. none of the above

72. Make use of structure. Which set of side lengths below will not form a right triangle? (Side lengths rounded to the nearest tenth.)

  A. 12, 16, 20

  B. 5.3, 6.1, 8.1

  C. 7, 24, 25

  D. 10, 11, 14

73. A computer monitor has a width of 12 in. and a height of 9 in. What is the diagonal length of the monitor?

74. Marlyn built a ramp for his toy cars. What is the distance his cars travel from the top of the ramp to the table as they go down the ramp?

16 in.

63 in.
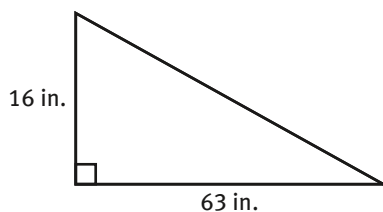
75. Critique the reasoning of others. Jon and Don were asked to find the length of the hypotenuse of the right triangle below. Which student found the length correctly? Justify your choice.
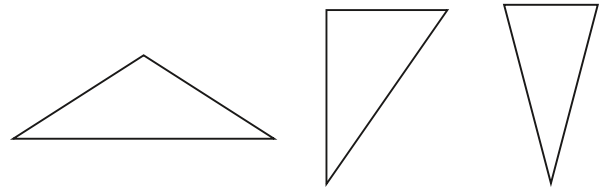

8 mm

c

12 mm
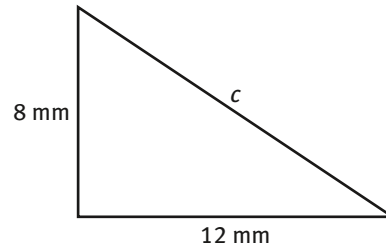
Jon:
$8^2 + 12^2 = c^2$
$64 + 144 = 208$
$\sqrt{208} = 14.4$ mm

Don:
$8^2 + 12^2 = c^2$
$64 + 144 = 208$
208 mm

LESSON 22-2

76. Reason abstractly. For which of the triangles below can the Pythagorean Theorem be used to find the missing side length? Justify your answer.
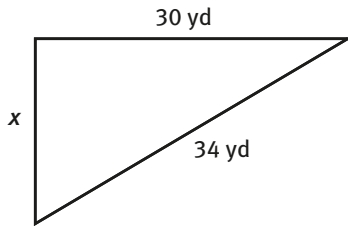

77. Make sense of problems. A 24-foot ladder is leaned against a brick wall so that 2 feet of the ladder extend above the wall. The base of the ladder is 6 feet from the wall. What is the height of the wall?
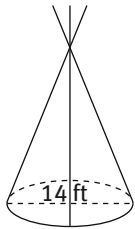
78. Find x.

x

60 ft

48 ft

79. Find x.

30 yd

x

34 yd
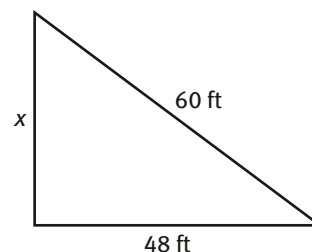
80. Persevere in solving problems. A tipi is set up with tipi poles that are 36 feet long. The poles extend 3 feet above the top of the tipi. The diameter of the tipi is 14 feet. How tall is the tipi, rounded to the nearest tenth?
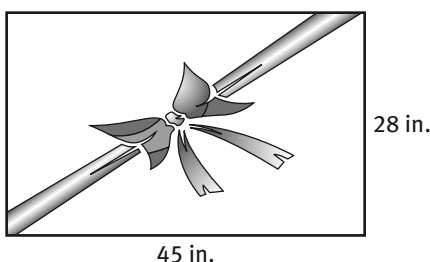
14 ft

LESSON 23-1

81. Reason quantitatively. Which of these lengths is the shortest?

   A. the diagonal of a square with 16 in. sides

   B. the hypotenuse of a right triangle with leg lengths of 14 in. and 17 in.

   **C.** the diagonal of a rectangle with side lengths of 20 in. and 10 in.

82. A ribbon is placed diagonally across a gift box as shown below. What is the length of the ribbon?

28 in.

45 in.

83. Model with mathematics. Joline made a map of her city as shown below. To walk from her house to the movie theater, Joline walks 15 blocks on Elm Street from her house to the diner. From the diner she walks 8 blocks on Birch Street to the movie theater. If Joline could walk a direct line diagonally from her house to the movie theater, how much less distance would she have to walk?

Birch Street

DINER

Elm Street

84. Find x.

28 in.

53 in.
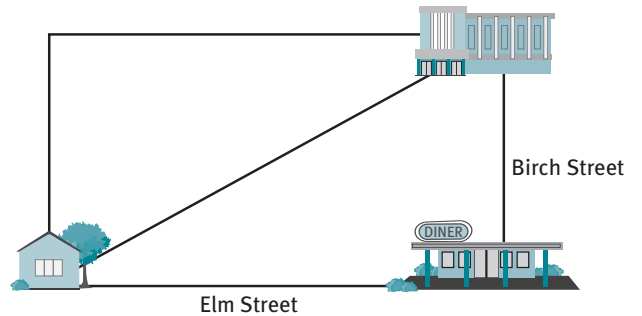
x
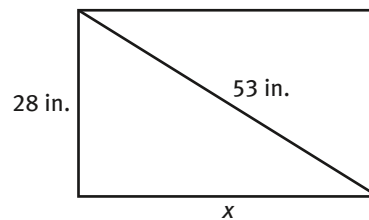
85. Make sense of problems. A student made several shapes on a Geoboard as shown below. The leg lengths of the right triangle are 28 mm and 195 mm. What is the length of the hypotenuse of the right triangle the student made?
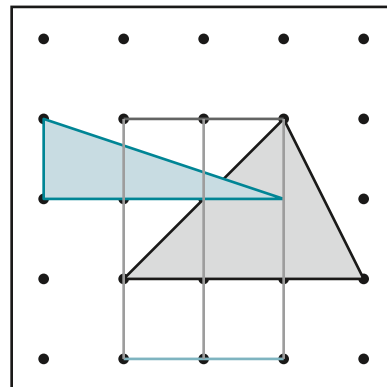
LESSON 23-2

**86. Attend to precision.** Which of the following is the length of the hypotenuse of a right triangle with vertices at the points $(0, 5)$, $(0, 0)$, and $(6, 0)$, rounded to the nearest tenth?

   A. 61 units

   B. 8.2 units

   C. 7.8 units

   D. none of the above

87. Which of the following is the distance between the points $(-2, 4)$ and $(3, -1)$ rounded to the nearest tenth?

   A. 7.1 units

   B. 50 units

   C. 7.6 units

   D. none of the above

88. Reason quantitatively. How far from the origin is the point $(4, 2)$ rounded to the nearest tenth?
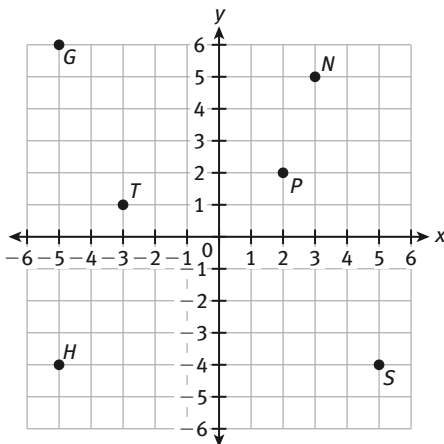
89. What is the distance from points N and H rounded to the nearest tenth?

90. What is the distance from points S and G rounded to the nearest tenth?

91. What is the distance from points T and P rounded to the nearest tenth?

LESSON 24-1

92. Make use of structure. Tell which of the following sets of side lengths forms a right triangle.

   A. 11, 60, 61

   B. 12, 35, 38

   C. 18, 76, 82

   D. 36, 300, 325

93. Tell which of the following sets of side lengths does *not* form a right triangle.

   A. 21, 220, 221

   B. 15, 112, 113

   C. 7, 20, 25

   D. 13, 84, 85

94. Construct viable arguments. A quilter stitched a triangle on a quilt. The side lengths of the triangle he stitched were 9 inches, 20 inches, and 40 inches. Did he stitch a right triangle? Explain why or why not.

95. A triangle has side lengths of 0.6 mm, 0.8 mm, and 1 mm. Do these three side lengths form a right triangle?

96. A triangle has side lengths of 0.9 mm, 1.1 mm, and 1.5 mm. Do these three side lengths form a right triangle?

(14)

LESSON 24-2

97. What number forms a Pythagorean triple with 14 and 48?

98. Which of the following is not a Pythagorean triple?

   A. 3, 4, 5

   B. 8, 15, 17

   C. 10, 35, 37

   D. 9, 40, 41

99. Make use of structure. The numbers 5, 12, and 13 form a Pythagorean triple. Give three other Pythagorean triples that can be generated from this set.

Construct viable arguments. Tell whether the following statements are always, sometimes, or never true. Explain your reasoning.

100. Pythagorean triples can be created by multiplying the side lengths of a right triangle by a constant.

101. Pythagorean triples can be created by adding a constant to the side lengths of a right triangle.

102. Pythagorean triples can be created by multiplying the side lengths of a triangle by a constant.
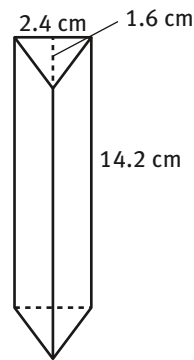
LESSON 25-1

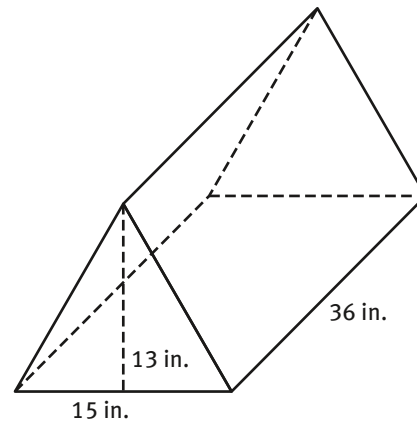Find the lateral and surface areas of each figure below.

103.

4 m
2 m
13 m

104.

2.4 cm   1.6 cm
14.2 cm

105.

36 in.
13 in.
15 in.
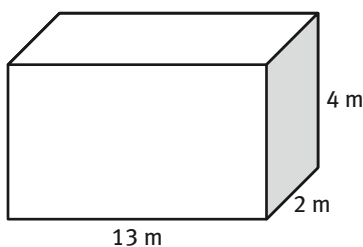
106. Reason quantitatively. Scotty wants to put wallpaper on three walls of a playroom that do not have windows. If the room is 22 feet wide, 26 feet long, and 8 feet high, what is the area of the three walls that Scotty wants to put wallpaper on?

107. Josie is putting labels on candy boxes in the shape of triangular prisms as shown below. What is the area of a label that covers the three rectangular faces?

Candy Bar
6 in.
2 in.

LESSON 25-2

108. Make sense of problems. A farmer is building a grain silo as shown below. The silo will have a radius of 13 feet and a height of 25 feet to the top of the cylindrical portion. What is the area of the metal sheet needed to form the cylindrical part of the silo rounded to the nearest tenth?

25 ft
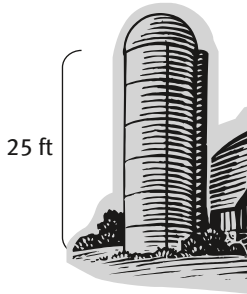
109. A cylinder has a radius of 8 yd. and a height of 4 yd. Determine which answer below is the surface area of this cylinder, rounding to the nearest tenth. Use the π key for *pi*.

A. 603.2 yd²

B. 100.5 yd²

C. 251.2 yd²

D. none of the above

110. Use appropriate tools. Which answer below shows the lateral area of a cylinder with a diameter of 16 m and a height of 4 m, rounded to the nearest tenth? Use the π key for *pi*.

A. 100.48 m²

B. 64 m²

C. 201.1 m²

D. none of the above

**Construct viable arguments.** Determine whether each statement is true or false. Justify your choice.

111. The lateral area of a cylinder can be determined given the circumference and radius of the cylinder.

112. The lateral area of a cylinder can be determined given the diameter and height of the cylinder.

LESSON 26-1

113. Find the volume of this rectangular prism.

26.5 ft.

5.5 ft.

3 ft.
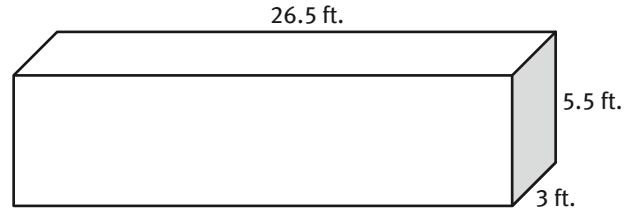
114. Find the volume of this rectangular pyramid.

height 12 in.

8 in.

5 in.
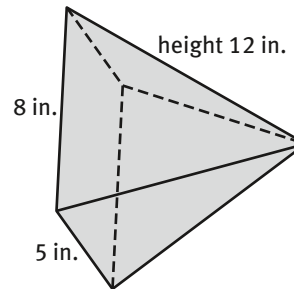
115. Find the volume of a square pyramid that has edge lengths of 169 m and an altitude of 145 m.

116. Attend to precision. Which answer below shows the volume of a rectangular prism with the following dimensions: length 4.25 cm, width 5.75 cm, and height 2 cm? (Round to the nearest tenth.)

A. 103.9 cm³

B. 12 cm³

C. 64.4 cm³

D. 48.9 cm³

117. Which answer below shows the volume of a rectangular pyramid with dimensions of length $7\frac{1}{2}$ in, width $8\frac{1}{4}$ in, and altitude of 9 in?

A. $67\frac{1}{2}$ in^3

B. $556\frac{7}{8}$ in^3

C. $185\frac{5}{8}$ in^3

D. none of the above

LESSON 26-2

118. Find the volume of a cylinder with a radius of 3 in. and a height of 4.5 in.

119. **Attend to precision.** Find the volume of a cylinder with a diameter of 8 ft. and a height of $2\frac{1}{4}$ ft. Use $\frac{22}{7}$ for π.

120. Which answer below is the volume of a cone with a radius of 65 mm and a height of 12 mm? Use 3.14 for π.

A. 2450.4 mm^3

B. 159,278.7 mm^3
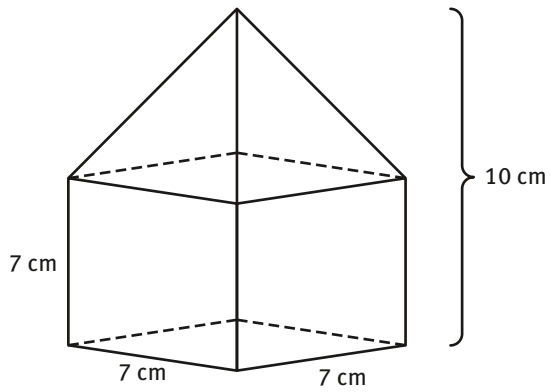
C. 13,273.2 mm^3

D. 53,066 mm^3

121. **Critique the reasoning of others.** Kim says that the volume of a cone with a diameter of 4 cm and a height of 9 cm is 37.68 cm^3. Is Kim correct? Explain why or why not.

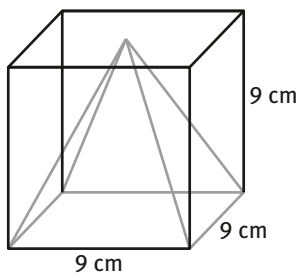**122.** What is the volume of a sphere with a diameter of 18 ft?

LESSON 26-3

123. Find the volume of a composite solid composed of two congruent right triangular pyramids with heights of 12 mm and edge lengths of 3 mm, 4 mm, and 5 mm.

124. **Model with mathematics.** Sketch a composite figure of a toy rocket consisting of a cylinder with radius of 2 in. and height of 6 in., and a cone with the same radius and a height of 2 in.

125. Determine the volume of the composite solid you sketched in Item 124. Round to the nearest tenth.

126. Persevere in solving problems. Which of the following solids has the greatest volume?

A.

10 cm

7 cm

7 cm   7 cm

B.

9 cm

9 cm

9 cm

C.

10 cm

4 cm

18