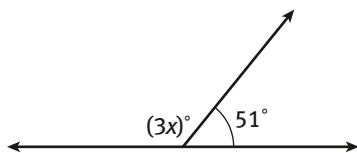


# Answers to Course 2 Unit 4 Practice

## LESSON 13-1

1. a.



b.  $3x + 51 = 180$

$x = 43$

c. One angle is  $51^\circ$ ; the other angle is  $129^\circ$ .

2. B

3. C

4.  $x = 38^\circ$

5.  $x = 21$ ;  $m\angle ZTS = 116^\circ$  and  
 $\angle NRQ = 64^\circ$

## LESSON 13-2

6. a.  $74^\circ$

b.  $106^\circ$

c.  $74^\circ$

7.  $x = 30^\circ$ ; The angles measure  $123^\circ$ ,  $36^\circ$ , and  $45^\circ$ .

8. C

9. C

10.  $A = 59^\circ$

$B = 82^\circ$

$C = 39^\circ$

$D = 90^\circ$

$E = 51^\circ$

## LESSON 14-1

11. a. Yes;  $6 + 3 = 9$ , which is  $> 8$ .

b. Yes,  $4 + 5 = 9$ , which is  $> 7$ .

c. No,  $6 + 8 = 14$ , which is not  $> 16$ .

d. No,  $7 + 7 = 14$ , which is not  $> 14$ .

12. Answers may vary. Any length greater than 4 and less than 11 inches is correct.

13. Check students' drawings.

14. D

15. B

## LESSON 14-2

16. a. Unique; two angles and an included side form a unique triangle.

b. Unique; two angles and a side form a unique triangle.

c. More than one; a side length is also needed to determine a unique triangle.

d. Unique; three side lengths determine a unique triangle.

17. A

18. D

19. Three sides determine a unique triangle.

20. Yes, two sides and an included angle determine a unique triangle.

## LESSON 15-1

21. C

22. a.  $\angle A$  corresponds to  $\angle E$ ,  $\angle B$  corresponds to  $\angle F$ ,  
 $\angle C$  corresponds to  $\angle G$ ,  $\angle D$  corresponds to  $\angle H$

b.  $\overline{AB}$  corresponds to  $\overline{EF}$ ,  $\overline{BC}$  corresponds to  $\overline{FG}$ ,  
 $\overline{CD}$  corresponds to  $\overline{GH}$ ,  $\overline{DA}$  corresponds to  $\overline{HE}$

c.  $\frac{AD}{EH} = \frac{BC}{FG} = \frac{8}{16}$ ,  $\frac{DC}{HG} = \frac{AB}{EF} = \frac{10}{20}$

d. The corresponding sides are in proportion.  
The ratios of corresponding sides are equal to a common ratio of 1:2, the figures are in proportion.

e. The figures are similar; the corresponding angles are equal and the corresponding sides are in proportion.

23. Check students' drawings. The corresponding angles are congruent and the corresponding sides are proportional.

24. Yes, they are in the ratio 1:4.

25. B

## LESSON 15-2

26.  $BC = 21$  and  $ED = 18$
27. C
28. a. Check students' drawings.  
b.  $\frac{x}{9} = \frac{4}{3}$ ; The flagpole is 12 feet tall.
29. B
30. 108 inches or 9 feet

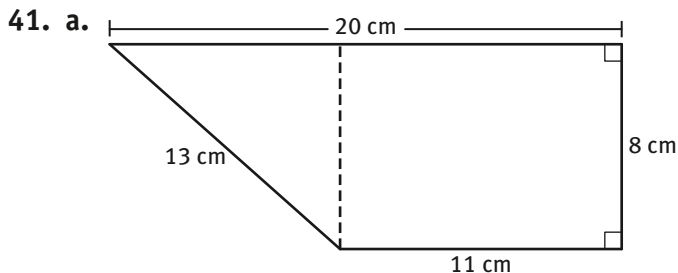
## LESSON 16-1

31. B
32. 113.04 inches
33. A
34. About 104 revolutions; 600 feet = 7,200 inches, Circumference is approximately 69.08 inches,  
 $\frac{7,200}{69.08} \approx 104.2$
35. Diameter = 18 cm; radius = 9 cm.

## LESSON 16-2

36. C
37. D
38.  $452.16 \text{ cm}^2$
39. a.  $\pi$  or  $3.14 \text{ ft}^2$   
b.  $109.96 \text{ ft}^2$
40.  $25.12 \text{ in.}^2$ ;  $3.14(8)^2 = 200.96$ ,  $200.96 \div 8 = 25.12$

## LESSON 17-1



- b. 124 cm  
c. 52 cm

42. C  
43.  $201.6 \text{ in.}^2$   
44. D  
45.  $630 \text{ in.}^2$

## LESSON 17-2

46. D
47. a. 9 feet  
b. Area of rectangle = 8 ft by 15 ft = 120 ft.  
Area of semicircle is  $\frac{1}{2}\pi r^2 = \frac{1}{2}(3.14)(16)$   
 $= 25.12 \text{ ft}^2$ . Total area =  $120 + 25.12 = 145.12 \text{ ft}^2$ .
- c. Circumference of semicircle is  $\frac{1}{2}\pi d =$   
 $\frac{1}{2}(3.14)(8) = 12.56 \text{ ft}$ . Distance around three  
sides of rectangle =  $15 + 8 + 15 = 38 \text{ ft}$ .  
Total distance =  $12.56 \text{ ft} + 38 \text{ ft} = 50.56 \text{ ft}$ .
48. D
49. Area of the pan =  $\pi r^2 = (3.14)(36) = 113.04 \text{ in.}^2$   
Area of the pizza =  $\pi r^2 = (3.14)(16) = 50.24 \text{ in.}^2$   
Area of pan not covered =  $113.04 \text{ in.}^2 - 50.24 \text{ in.}^2$   
 $= 62.8 \text{ in.}^2$
50. Area of the triangle (cone) =  $\frac{1}{2}bh = \frac{1}{2}(6)(10)$   
 $= 30 \text{ ft}^2$ . Area of the semi circle (ice cream)  
 $= \frac{1}{2}\pi r^2 = \frac{1}{2}(3.14)(9) = 14.13 \text{ ft}^2$ .  
Total area =  $30 + 14.13 = 44.13 \text{ ft}^2$ .

## LESSON 18-1

51. a. hexagonal prism  
b. hexagon and square
52. triangle
53. B
54. C
55. No, there are no curves in a triangular prism.

## LESSON 18-2

56. a.  $28 \text{ m}^2$ ; the dimensions of each lateral face are 4 m by 7 m, so the area of each lateral face is  $4 \times 7 = 28$ .
- b.  $168 \text{ m}^2$ ;  $28 \text{ m}^2 \times 6$  lateral faces =  $168 \text{ m}^2$
- c. 24 m;  $4 \text{ m} \times 6$  sides = 24 m
57. a.  $120 \text{ ft}^2$
- b.  $174 \text{ ft}^2$
58. B
59. C
60. The two bases must be added to the lateral area to find the surface area of a rectangular prism.

## LESSON 18-3

61. B
62. a.  $92.7 \text{ cm}^2$ ;  
 $L = \frac{1}{2}P \times 1$   
 $L = \frac{1}{2} \times (6 + 6 + 6) \times 10.3 = 92.7$
- b.  $123.6 \text{ cm}^2$  ;  
 $SA = \frac{1}{2} \times 6 \times 10.3 = 30.9 + 92.7 = 126.3$

63. C
64.  $126 \text{ in.}^2$
65.  $257.25 \text{ ft}^2$

## LESSON 19-1

66.  $216 \text{ ft}^3$
67. D
68. C
69. 54 cubes;  $36 \div 4 = 9$ ,  $12 \div 4 = 3$ ,  $8 \div 4 = 2$ .  
There are two layers of 9-by-3 cubes, for a total of 54 cubes.
70.  $2736 \text{ in.}^3$

## LESSON 19-2

71. a.  $5043 \text{ cm}^3$   
b.  $1066 \text{ cm}^3$   
c.  $6109 \text{ cm}^3$
72. A
73.  $1792 \text{ in.}^3$
74. C
75.  $10,976 \text{ cm}^3$