

Answer Key

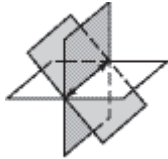
Lesson 1.1

Practice Level B

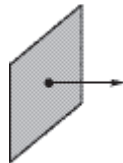
1. true 2. true 3. false 4. true 5. false

6. true 7. false 8. true

9. Sample answer: 10. Sample answer:



11. Sample answer: 12. Sample answer:



13. \overrightarrow{AB} , \overrightarrow{BA} , \overrightarrow{AC} , \overrightarrow{CA} , \overrightarrow{BC} , \overrightarrow{CB} , \overrightarrow{CD} , \overrightarrow{DC} , \overrightarrow{EC} , \overrightarrow{CE} , \overrightarrow{ED} , \overrightarrow{DE}

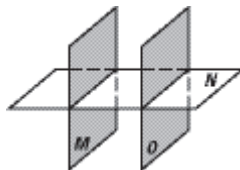
14. Sample answer: \overrightarrow{AB} , \overrightarrow{BA} , and \overrightarrow{CA} , \overrightarrow{CB}

15. \overrightarrow{EC} , \overrightarrow{CD} , \overrightarrow{AB}

16. Sample answer:



17.



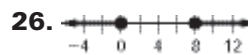
18. yes 19. no 20. no 21. yes 22. no 23. no



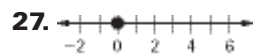
ray



segment



rays



point

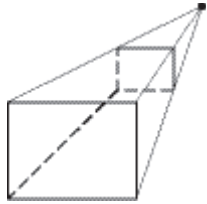
Answer Key

28. a. four-legged stool; Possible explanation: The tips of the 4 legs are not coplanar.

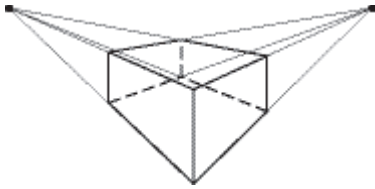
b. Possible explanation: The three-legged stool will not rock because the tips of its legs will always be coplanar. The four-legged stool may rock if the tips of its legs are not coplanar.

29. a. Yes, it has one vanishing point.

b.



c.



Answer Key

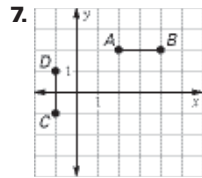
Answer Key

Lesson 1.2

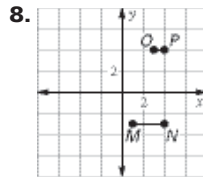
Practice Level B

1. 3.4 cm 2. 1.8 cm 3. 2.1 cm 4. 25.5

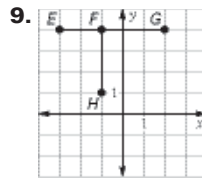
5. 29 6. 6



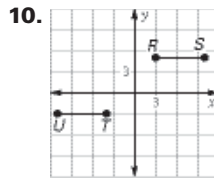
congruent



not congruent



not congruent



congruent

11. 3 12. 9 13. 4 14. 6 15. 6 16. 11

17. 8 18. 2 19. 11 20. 43 21. 33 22. 32

23. 11 24. 44 25. 24 26. 28 27. 32

28. $2x + 3x = 25$; $HJ = 10$; $JK = 15$

29. $\frac{x}{4} + 3x - 4 = 22$; $HJ = 2$; $JK = 20$

30. $5x - 4 + 8x - 10 = 38$; $HJ = 16$; $JK = 22$


31. $5x - 3 + x - 9 = 5x$; $HJ = 57$; $JK = 3$

32. 3.1 mi

Answer Key

Lesson 1.3

Practice Level B

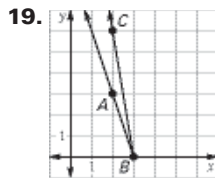
1. 7 cm 2. 13.5 ft 3. 9 yd 4. 7.4 m 5. 24
6. 26 7. 10 8. $(5, -\frac{1}{2})$ 9. (2, 2) 10. (1, 4)
11. $(-2\frac{1}{2}, -10)$ 12. (-6, 4) 13. (3, -8)
14. (1, -14) 15. (-19, -3) 16. 3.2 17. 5.4
18. 4.5 19. 11.3 20. 9; 1.5 21. 7; -4.5 22. $AB = \sqrt{13}$; $CD = \sqrt{13}$; not congruent
23. $RS = 5$; $TU = 5$; congruent
24. $KL = \sqrt{85}$; $MN = 9$; congruent
25. $OP = 9$; $QR = 5$; not congruent
26. a.  4.8 mi b. 1.5 h
27. Dunkirk to Clearfield = 10.2 mi; Dunkirk to Lake City = 8.6 mi; Dunkirk to Allentown = 4.1 mi; Clearfield to Lake City = 7.1 mi; Clearfield to Allentown = 9.2 mi; Lake City to Allentown = 5 mi
28. Dunkirk and Allentown; Dunkirk and Clearfield
29. Choice C because the total distance of the path is closest to 26 miles.

Answer Key

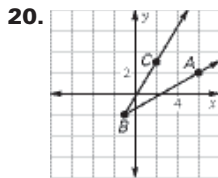
Lesson 1.4

Practice Level B

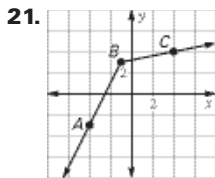
1. 60° ; $\angle ABC$, $\angle CBA$, or $\angle B$; B , \overrightarrow{BA} , \overrightarrow{BC}
2. 38° ; $\angle MOP$, $\angle POM$, or $\angle O$; O , \overrightarrow{OM} , \overrightarrow{OP}
3. 112° ; $\angle EFG$, $\angle GFE$, or $\angle F$; F , \overrightarrow{FE} , \overrightarrow{FG}
4. Sample answer: $\angle K$; right
5. Sample answer: $\angle KLM$; straight
6. Sample answer: $\angle MQP$; acute
7. Sample answer: $\angle JMK$; acute
8. Sample answer: $\angle P$; acute
9. Sample answer: $\angle KLP$; obtuse
10. 25°
11. 85° 12. 20° 13. 160° 14. 15° 15. 75°
16. 48° 17. 98° 18. 112°



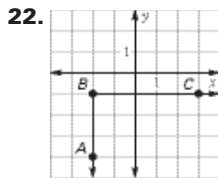
acute; Sample answer: (2, 5)



acute; Sample answer: (2, 1)



obtuse; Sample answer: (2, -8)



right; Sample answer: (0, -3)

23. $22 < x < 52$ 24. 15°

25. a. Acute angles: $\angle MNQ$, $\angle QNR$, $\angle RNS$, and $\angle SNP$; There are no obtuse angles; Right angles: $\angle MNR$ and $\angle PNR$

b. $\angle MNQ \cong \angle SNP$, $\angle QNR \cong \angle RNS$, and $\angle MNR \cong \angle PNR$ c. $m\angle MNR = 90^\circ$, $m\angle RNS = 30^\circ$, $m\angle QNS = 60^\circ$, and $m\angle QNP = 120^\circ$

Answer Key

Lesson 1.5

Practice Level B

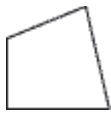
1. 10° ; 170° 2. 57° ; 123° 3. 18° ; 162° 4. 83° ; 97° 5. 40° ; 50° 6. 38° ; 142° 7. 85° ; 95°
8. neither 9. neither 10. linear pair
11. vertical angles 12. vertical angles
13. 22.5° ; 67.5° 14. 20° ; 160° 15. 71° ; 109°
16. $x = 10$, $y = 8.25$ 17. $x = 5$, $y = 50$
18. $x = 13$, $y = 23$ 19. $x = 6$, $y = 24$
20. $x = 3.25$, $y = 5.5$ 21. $x = 21$, $y = 35$
22. never 23. always 24. sometimes
25. 55° ; 35° 26. 50° ; 40° 27. 32.4° ; 57.6°
28. 60° ; 30° 29. 65° ; 115° 30. 150° ; 30°
31. 163° ; 17° 32. 160° ; 20°
33. Sample answer: $\angle AIB$ and $\angle AIH$, $\angle AJB$ and $\angle AJG$ 34. Sample answer: $\angle HBG$ and $\angle GBC$, $\angle BCF$ and $\angle FCE$ 35. Sample answer: $\angle AIB$ and $\angle HIJ$, $\angle BIJ$ and $\angle AIH$ 36. Sample answer: $\angle AIB$ and $\angle AIH$, $\angle AJB$ and $\angle AJG$
37. Sample answer: $\angle AIB$ and $\angle AIH$, $\angle AJB$ and $\angle AJG$ 38. The angle of elevation is increasing. The closer the plane gets, the higher up you have to look.

Answer Key

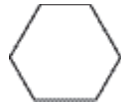
Lesson 1.6

Practice Level B

1. The figure is not a polygon because part of the figure is not a segment. 2. The figure is a concave polygon. 3. The figure is a convex polygon. 4. regular pentagon; It has 5 sides, and it is both equilateral and equiangular. 5. equilateral quadrilateral; It has 4 sides. It is equilateral, but not equiangular. 6. triangle; It has 3 sides. It is neither equilateral nor equiangular, so it is not regular. 7. hexagon; It has 6 sides. It is neither equilateral nor equiangular, so it is not regular. 8. 50 ft 9. 144° 10. 23 km 11. sometimes 12. sometimes 13. never 14. always 15. Sample answer: 16. Sample answer:

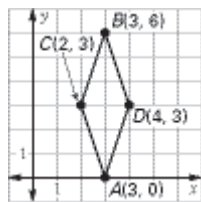


17. Sample answer: 18. Sample answer:



19. 30 20. $\frac{1}{2}$ 21. ± 7 22. ± 1 23. 6 24. 5

25. quadrilateral;



$$AC = \sqrt{(3 - 2)^2 + (0 - 3)^2} = \sqrt{10},$$

$$AD = \sqrt{(3 - 4)^2 + (0 - 3)^2} = \sqrt{10},$$

$$BC = \sqrt{(3 - 2)^2 + (6 - 3)^2} = \sqrt{10},$$

$$BD = \sqrt{(3 - 4)^2 + (6 - 3)^2} = \sqrt{10};$$

$$AC = AD = BC = BD$$

26. 5.5 ft; The sides of the triangle are congruent because the triangle is regular. Using this fact, write and solve an equation to find x . Then determine the perimeter of the triangle in feet. 27. a. convex b. equiangular octagon c. 2; This octagon has only 2 lines of symmetry while a regular octagon has 8.

Answer Key

Lesson 1.7

Practice Level B

1. 46 ft; 126 ft^2 2. 30 in.; 30 in.^2

3. 38 m; $90\frac{1}{4} \text{ m}^2$ 4. 201.0 cm; 3215.4 cm^2

5. 94.2 yd; 706.5 yd^2 6. 18.2 km; 26.4 km^2

7.  6 mi^2

8.  1962.5 in.^2

9. 13.4 units 10. 13.6 units 11. 18 units

12. 6 in. 13. 16.6 m 14. 0.0072 15. 0.000022

16. 0.125 17. 126 18. 1300 19. 1,500,000

20. 65 21. 1728 22. 1 23. 24 in. 24. 12 m

25. $43\frac{3}{4} \text{ m}$ 26. length = 9.6 m, width = 4.8 m

27. height = 52 yd, base = 13 yd

28. $\frac{1}{9} \approx 0.11$ 29. 2916 yd^2 ; 648 ft 30. 2

31. a.



b. base = 7 ft, height = 3.5 ft

c. 126 in.^2 ; 0.875 ft^2