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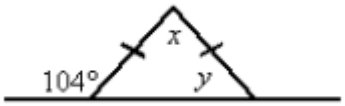
Geometry - Final Exam Study Guide

Multiple Choice

Identify the choice that best completes the statement or answers the question.

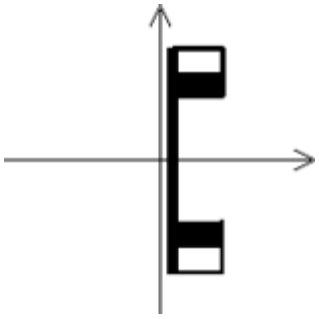
1. Find the values of x and y.



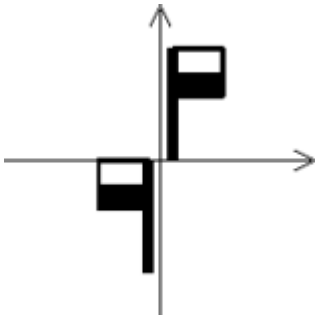
a. $x = 28°$, $y = 104°$
b. $x = 76°$, $y = 56°$
c. $x = 76°$, $y = 104°$
d. $x = 28°$, $y = 76°$

2. Which picture shows a reflection of the flag?

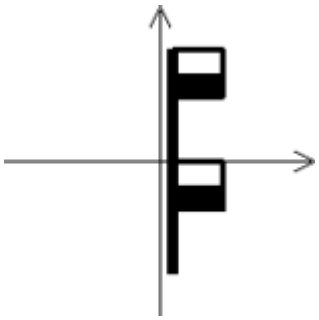
a.



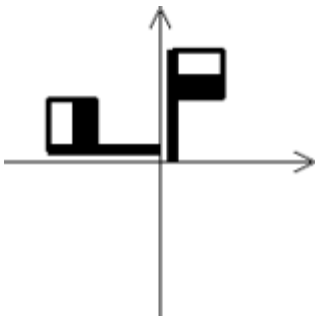
b.



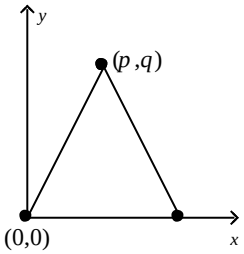
c.



d.

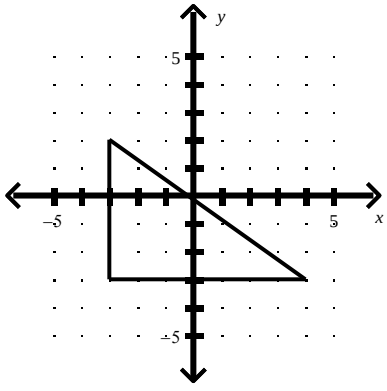


3. An isosceles triangle is placed in a convenient position in the first quadrant of a coordinate plane. Which is the missing label for the vertex?



a. $(q, 0)$
b. $(2p, 0)$
c. (q, r)
d. $(0, 2p)$

4. For the triangle, find the coordinates of the point of concurrency of the perpendicular bisectors of the sides.



a. (0, 0)

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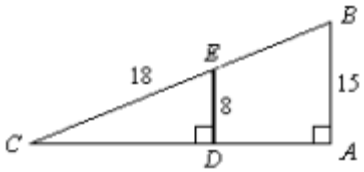
b. $(1, -\frac{1}{2})$
c. $(0, -1)$
d. $(\frac{1}{2}, -\frac{1}{2})$

5. Two sides of a triangle have sides 5 and 20. The length of the third side must be greater than _____ and less than ____.
   a. 4, 21
   b. 14, 26
   c. 15, 25
   d. 5, 20

6. Which of these lengths could be the sides of a triangle?
   a. 12 cm, 5 cm, 18 cm
   b. 9 cm, 6 cm, 14 cm
   c. 4 cm, 12 cm, 18 cm
   d. 5 cm, 9 cm, 14 cm

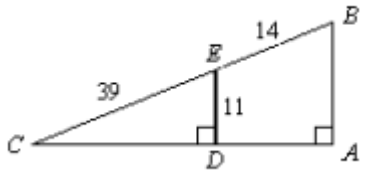
7. Mr. Jones has taken a survey of college students and found that 70 out of 74 students are liberal arts majors. If a college has 9698 students, what is the best estimate of the number of students who are liberal arts majors?
   a. 91,738
   b. 9174
   c. 51
   d. 10,252

8. Given that $\frac{ED}{BA} = \frac{EC}{BC}$, find *BC* to the nearest tenth.
   The figure is not drawn to scale.



   a. 31.6
   b. 15.8
   c. 2.3
   d. 33.8

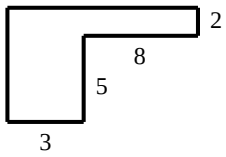
9. Given that $\frac{ED}{BA} = \frac{EC}{BC}$, find *AB* to the nearest tenth.
   The figure is not drawn to scale.

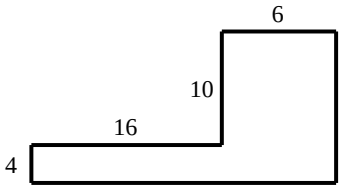


   a. 14.9
   b. 18.2
   c. 17.1
   d. 16.0

10. A map has a scale of $\frac{1}{2}$ inch : 14 miles. If the actual distance between the two cities is 448 miles, how far apart are they on the map?
    a. 32 inches
    b. 64 inches
    c. 16 inches
    d. 8 inches

11. Are the two polygons similar? (They are not drawn to scale, but assume all angles are 90°.) If not, explain why.





    a. No; $\frac{3}{6} \neq \frac{5}{16}$
    b. No; $\frac{3}{6} \neq \frac{5}{4}$
    c. Yes
    d. not enough information to tell

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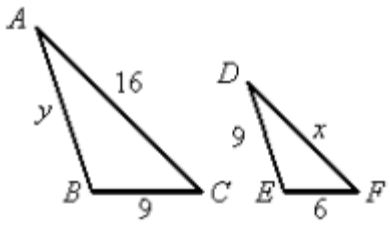
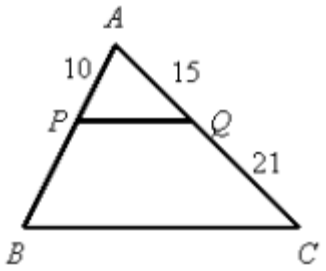
12. ΔABC and ΔXYZ are similar with $\angle A = \angle X$, and $\angle B = \angle Y$. If AB, BC, and AC are 8 inches, 9 inches, and 13 inches, respectively, and XY is 11 inches, find XZ.
    a. 6.5 in.
    b. 12.4 in.
    c. 9.5 in.
    d. 17.9 in.

13. Given that $\Delta ABC \sim \Delta DEF$, solve for x and y.



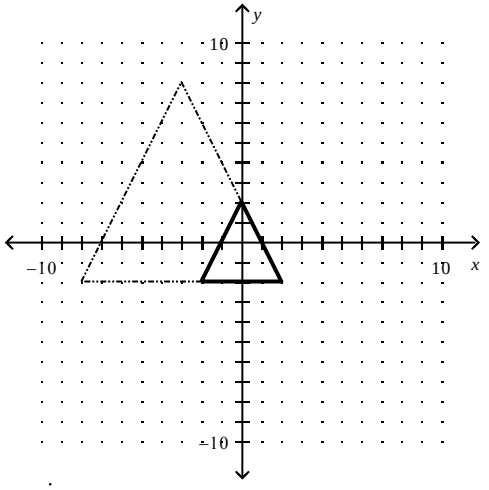
    a. $x = 9.67, y = 13.5$
    b. $x = 9.67, y = 12.5$
    c. $x = 10.67, y = 13.5$
    d. $x = 10.67, y = 12.5$

14. Given: $\overline{PQ} \parallel \overline{BC}$. Find the length of $\overline{BP}$.



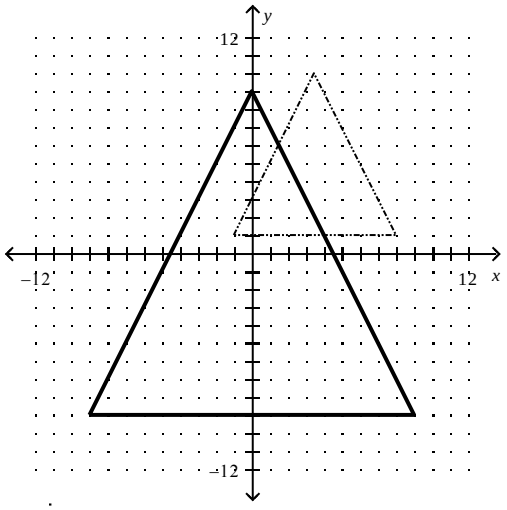
    a. 10
    b. 16
    c. 11
    d. 14

15. The dashed triangle is the image of the solid triangle for a dilation with center at the origin. What is the scale factor?



    a. $\frac{1}{3}$
    b. $\frac{5}{2}$
    c. 3
    d. $\frac{2}{5}$

16. The dashed triangle is the image of the solid triangle formed by a dilation centered at the origin. What is the scale factor?



    a. $\frac{1}{2}$
    b. $\frac{1}{4}$
    c. 4
    d. 2

17. Find the length of the leg of this right triangle. Give an approximation to 3 decimal places.

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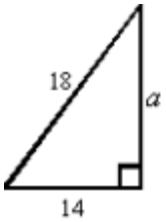


a. 22.804
b. 10.863
c. 5.657
d. 11.314

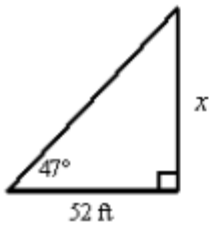
18. How long is a string reaching from the top of a 18-ft pole to a point on the ground that is 7 ft from the base of the pole?
    a. $\sqrt{373}$ ft
    b. $\sqrt{383}$ ft
    c. $\sqrt{275}$ ft
    d. $\sqrt{285}$ ft

19. Which set of lengths cannot form a right triangle?
    a. 5 mm, 12 mm, 13 mm
    b. 20 mm, 48 mm, 52 mm
    c. 10 mm, 24 mm, 26 mm
    d. 11 mm, 24 mm, 26 mm

20. A ship in calm seas steamed 21 km in one direction, turned and steamed 21 km in another direction, and then returned 14 km back to its original position. The captain then plotted the ship's course on a nautical chart. She asked her first officer to look at the chart and describe the ship's path. Did the first officer describe it as an acute, obtuse, or right triangle? Then the second officer said she could further identify whether the path was scalene, isosceles, or equilateral. What did she determine?
    a. acute; scalene
    b. obtuse; scalene
    c. acute; isosceles
    d. acute; equilateral

21. The shorter leg of a 30°-60°-90° triangle is 9.7 feet long. Find the perimeter.
    a. $\left(19.4 + 9.7\sqrt{3}\right)$ ft
    b. $\left(19.4 + 9.7\sqrt{2}\right)$ ft
    c. $\left(29.1 + 9.7\sqrt{3}\right)$ ft
    d. $\left(29.1 + 9.7\sqrt{2}\right)$ ft

22. A photographer shines a camera light at a particular painting forming an angle of 47° with the camera platform. If the light is 52 feet from the wall where the painting hangs, how high above the platform is the painting?



a. 48.49 ft
b. 55.76 ft
c. 1.07 ft
d. 0.93 ft

23. Write cos *A*.

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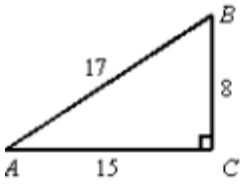
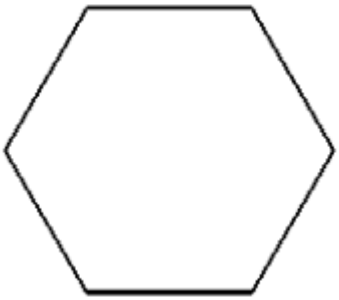


a. $\frac{8}{17}$
b. $\frac{15}{17}$
c. $\frac{8}{15}$
d. $\frac{15}{8}$

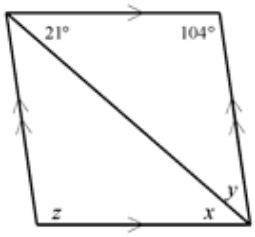
24. Find the missing angle and side measures of ΔABC, given that $m\angle A = 20°$, $m\angle C = 90°$, and $CB = 20$.
a. $m\angle B = 110°$, $c = 58.5$, $b = 55.4$
b. $m\angle B = 70°$, $c = 58.5$, $b = 54.9$
c. $m\angle B = 70°$, $c = 59$, $b = 54.9$
d. $m\angle B = 110°$, $c = 58.5$, $b = 54.9$

25. How many triangles are formed by drawing diagonals from one vertex in the figure? Find the sum of the measures of the angles in the figure.



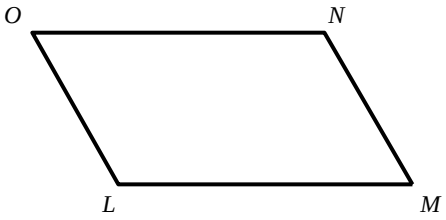
a. 5, 720°
b. 5, 900°
c. 4, 900°
d. 4, 720°

26. Find the value of the variables in the parallelogram.



a. $x = 55°$, $y = 21°$, $z = 104°$
b. $x = 52°$, $y = 10.5°$, $z = 159°$
c. $x = 10.5°$, $y = 52°$, $z = 159°$
d. $x = 21°$, $y = 55°$, $z = 104°$

27. If $ON = 7x - 6$, $LM = 6x + 4$, $NM = x - 5$, and $OL = 2y + 6$, find the values of x and y given that $LMNO$ is a parallelogram.



a. $x = 10;\ y = -\frac{1}{2}$
b. $x = \frac{1}{2};\ y = 8$
c. $x = 2;\ y = -2$
d. $x = 10;\ y = -2$

28. Which statement is true?
a. All rectangles are squares.
b. All quadrilaterals are squares.
c. All parallelograms are quadrilaterals.
d. All quadrilaterals are parallelograms.

29. Three vertices of an isosceles trapezoid are shown in the figure below.

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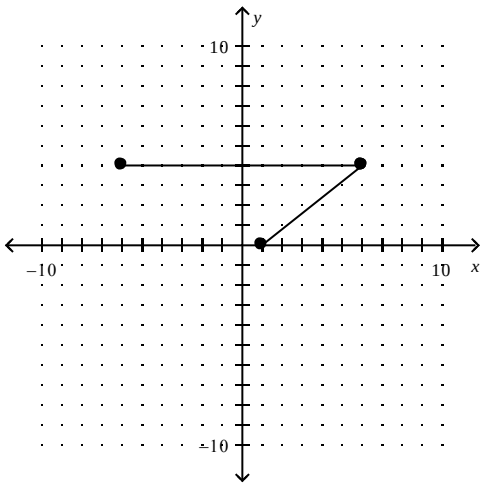
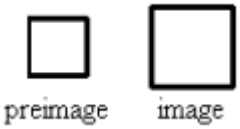


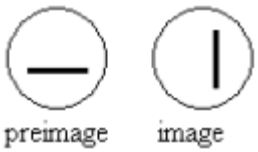
What are the coordinates of the missing vertex that make the bases parallel to the *x*-axis?

31. Which statement is false?
    a. All rhombuses are quadrilaterals.
    b. Every quadrilateral is a square.
    c. Every rectangle is a quadrilateral.
    d. All squares are kites.

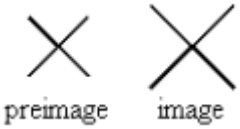
32. Which of the following transformations represents an isometry?
    a.



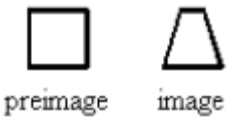
    b.



    c.



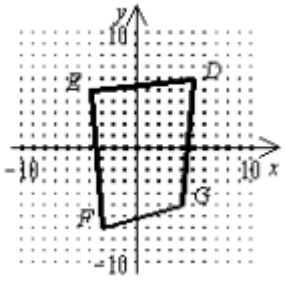
    d.



    a. $(-1, 0)$
    b. $(-1, -1)$
    c. $(0, -1)$
    d. $(0, 0)$

30. Use slope or the Distance Formula to determine the most precise name for the figure: *A*(–5, –6), *B*(–1, –1), *C*(4, 3), *D*(0, –2).
    a. trapezoid
    b. square
    c. rhombus
    d. kite

33. Create a polygon matrix to represent *DEFG*.



    a. $\begin{matrix} D & E & F & G \end{matrix}$
    $\begin{bmatrix} 5 & -4 & -3 & 4 \\ 6 & 5 & -7 & -5 \end{bmatrix}$

    b. $\begin{matrix} D & E & F & G \end{matrix}$
    $\begin{bmatrix} -5 & -6 & -1 & 4 \\ 6 & 5 & 7 & -5 \end{bmatrix}$

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c. $\begin{matrix} D & E & F & G \end{matrix}$

$$\begin{bmatrix} -5 & 4 & 3 & -4 \\ -6 & -5 & 7 & 5 \end{bmatrix}$$

d. $\begin{matrix} D & E & F & G \end{matrix}$

$$\begin{bmatrix} -3 & 6 & -7 & -7 \\ -6 & -5 & -4 & -4 \end{bmatrix}$$

34. Given $A = \begin{bmatrix} 3 \\ 1 \\ -1 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & -3 & 0 \end{bmatrix}$, find *AB*.

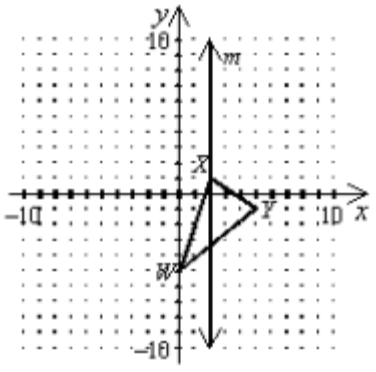
a. not possible

b. $\begin{bmatrix} 4 & 0 & 3 \\ 2 & -2 & 1 \\ 0 & -4 & -1 \end{bmatrix}$

c. $\begin{bmatrix} 3 & -9 & 0 \\ 1 & -3 & 0 \\ -1 & 3 & 0 \end{bmatrix}$

d. $[0]$

35. What are the coordinates of the vertices when the figure is reflected in line *m*?



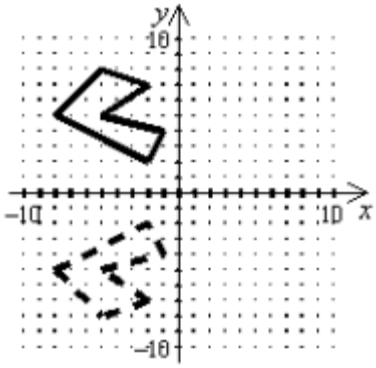
a. W' (0, 5), X' (–2, –1), Y' (–5, 1)

b. W' (–5, 4), X' (1, 2), Y' (–1, –1)

c. W' (4, –5), X' (2, 1), Y' (–1, –1)

d. W' (0, –5), X' (2, –1), Y' (–5, –1)

36. The change in position from the solid figure to the dotted figure is best described as a _____.



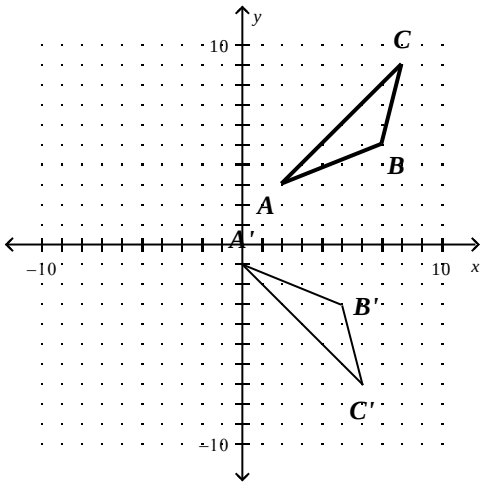
a. transmission

b. translation

c. rotation

d. reflection

37. Which glide reflection could map triangle *ABC* to triangle $A'B'C'$?



a. Translation: $(x, y) \rightarrow (x, y-2)$
Reflection: in $x = 0$

b. Translation: $(x, y) \rightarrow (x-2, y)$
Reflection: in $x = 0$

c. Translation: $(x, y) \rightarrow (x-2, y)$
Reflection: in $y = 1$

d. Translation: $(x, y) \rightarrow (x, y-2)$
Reflection: in $y = 1$

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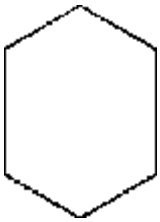
38. The hexagon shown below is equiangular. How many lines of symmetry does it have?



a. 2
b. 1
c. 3
d. 6

39. Which figure has more than 1 line of symmetry?

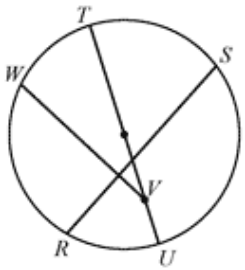
a.

b.

c.

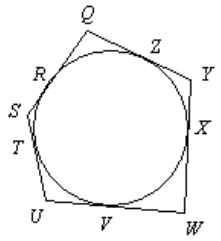
d.

40. Identify two chords.



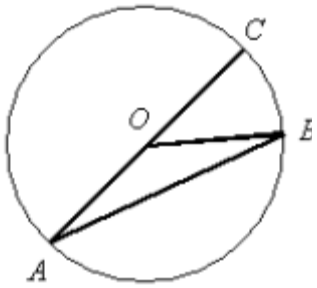
a. $\overline{RT}$ and $\overline{SU}$
b. $\overline{TU}$ and $\overline{VW}$
c. $\overline{RS}$ and $\overline{TU}$
d. $\overline{RS}$ and $\overline{VW}$

41. The circle is circumscribed by the pentagon as shown (not drawn to scale). If $QZ = 9$, $YX = 7$, $XW = 12$, $UW = 15$, and $SU = 16$, find the perimeter of the pentagon.



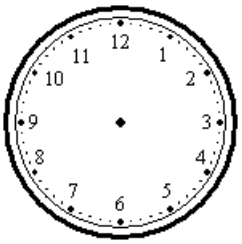
a. 94
b. 118
c. 112
d. 88

42. Given: In $\odot O$, $m\overset{\frown}{BAC} = 320°$. Find $m\angle A$.



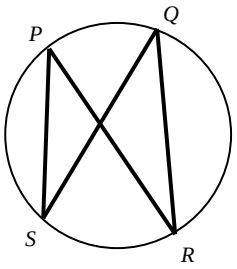
a. 10°
b. 20°
c. 26°
d. 13°

43. How many degrees does a minute hand move in 25 minutes?



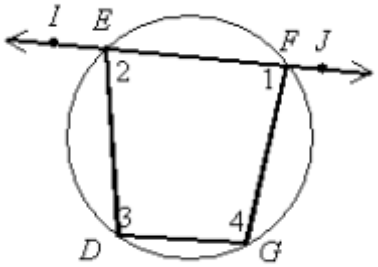
a. 200°
b. 150°
c. 100°
d. 125°

44. Find $m\angle PSQ$ if $m\angle PSQ = 2y - 5$ and $m\angle PRQ = y + 20$.



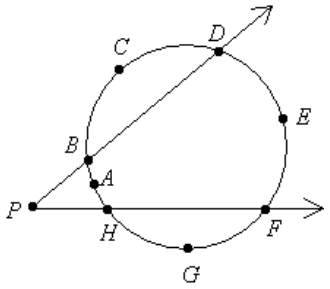
a. 45°
b. 22.5°
c. 35°
d. 25°

45. Given: $m\angle IED = 124°$ and $m\angle JFG = 110°$
Find the measure of each unknown angle. (not drawn to scale)



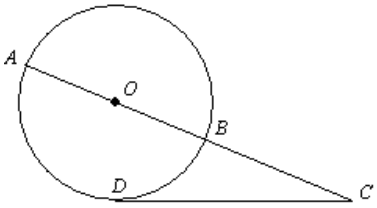
a. $m\angle 1 = 70°, m\angle 2 = 56°, m\angle 3 = 124°, m\angle 4 = 110°$
b. $m\angle 1 = 70°, m\angle 2 = 56°, m\angle 3 = 110°, m\angle 4 = 124°$
c. $m\angle 1 = 56°, m\angle 2 = 70°, m\angle 3 = 124°, m\angle 4 = 110°$
d. $m\angle 1 = 56°, m\angle 2 = 70°, m\angle 3 = 110°, m\angle 4 = 124°$

Use the diagram (not drawn to scale) and the given information.



46. $m\overset{\frown}{BCD} = 104°$, $m\overset{\frown}{DEF} = 94°$, $m\overset{\frown}{FGH} = 138°$, and $m\overset{\frown}{HAB} = 24°$
Find $m\angle FPD$.
a. 22°
b. 24°
c. 80°
d. 35°

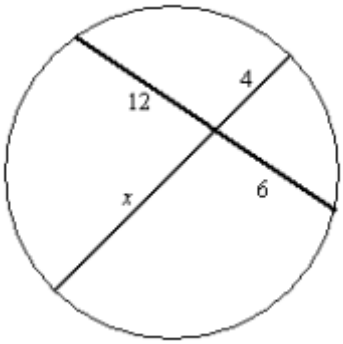
Use the diagram (not drawn to scale) and the given information to find the diameter of the circle. Round your answer to the nearest tenth.



47. $BC = 14$ and $DC = 21$.
a. 11.7
b. 45.5
c. 17.5
d. 14.8

Find the value of *x*.

48.



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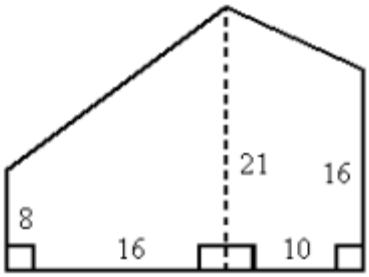
a. 18
b. 12
c. 6
d. 4

49. Write the standard equation of a circle with its center at the origin and radius 6.
a. $\frac{x^2}{12} + \frac{y^2}{12} = 1$
b. $x^2 + y^2 = 12$
c. $x^2 + y^2 = 36$
d. $x^2 + y^2 = 6$

50. Write the standard equation of a circle with center (2, –5) and radius 7.
a. $(x+2)^2 + (y-5)^2 = 7$
b. $(x-2)^2 + (y+5)^2 = 49$
c. $(x+2)^2 - (y-5)^2 = 7$
d. $(x-2)^2 + (y-5)^2 = 49$

51. A rectangular field is 130 m by 420 m. A rectangular barn 19 m by 25 m is built in the field. How much area is left over?
a. $54,125\ \text{m}^2$
b. $55,075\ \text{m}^2$
c. $54,556\ \text{m}^2$
d. $54,112\ \text{m}^2$

52. Find the area of the region shown by dividing it into two trapezoids.



a. 834 sq. units
b. 417 sq. units
c. 423 sq. units
d. 546 sq. units

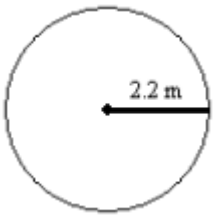
53. The area of a trapezoid is $210\ \text{in}^2$. If the height is 12 in. and the longer base is 24 in., what is the length of the shorter base? Round your answer to the nearest tenth.
a. 8.8 in.
b. 6.5 in.
c. 17.5 in.
d. 11.0 in.

54. The area of a regular octagon is $40\ \text{cm}^2$. What is the area of a regular octagon with sides three times as large as the sides of the first octagon?
a. $4800\ \text{cm}^2$
b. $120\ \text{cm}^2$
c. $360\ \text{cm}^2$
d. $425\ \text{cm}^2$

55. Leila needs to make a poster that is 2 m by 3.5 m for the big game. The cost of the paper is $2.75. Later she needs another poster with dimensions 1 m by 1.75 m. What is the paper for this poster likely to cost?
a. $0.44
b. $0.69
c. $1.38
d. $1.63

Find the area:

56.



a. 60.7904 m^2
b. 13.816 m^2
c. 15.1976 m^2
d. 3.7994 m^2

57. Find the area of the shaded region.

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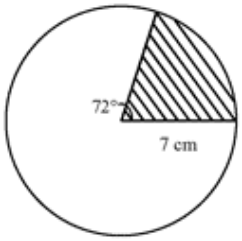


a. $38.48\ \text{cm}^2$
b. $123.15\ \text{cm}^2$
c. $153.94\ \text{cm}^2$
d. $30.79\ \text{cm}^2$

58. Find the area of an equilateral triangle with side length 14.
a. 42
b. $21\sqrt{3}$
c. 98
d. $49\sqrt{3}$

59. Find the area of a regular pentagon with side length 6 cm.
a. $61.9\ \text{cm}^2$
b. $76.6\ \text{cm}^2$
c. $123.9\ \text{cm}^2$
d. $78.6\ \text{cm}^2$

60. Find the area of a regular octagon with radius 9 cm. Round to the nearest tenth.
a. $229.1\ \text{cm}^2$
b. $210.5\ \text{cm}^2$
c. $458.2\ \text{cm}^2$
d. $324.0\ \text{cm}^2$

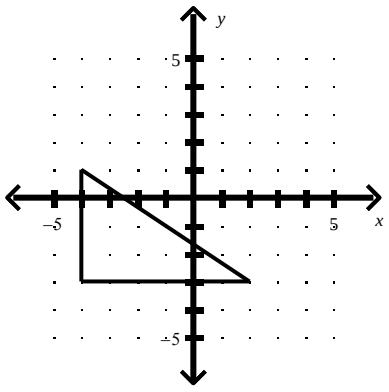
Numeric Response

1. **GRIDDED RESPONSE Grid the correct answer on a separate gridding sheet.**

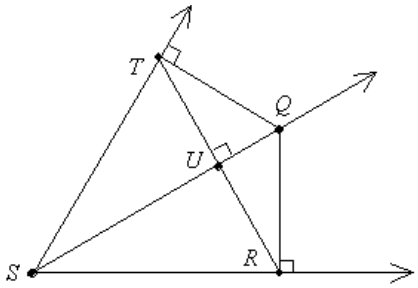
Late in the afternoon, a man who is 6 feet tall casts a 12-foot shadow. He is not far from a storage tank 111 feet tall. How long, in feet, is the shadow of the storage tank?

Short Answer

1. For the triangle, find the coordinates of the point of concurrency of the perpendicular bisectors of the sides.



2. Given: $\overrightarrow{SQ}$ bisects $\angle RST$. Find *QR* if $UT = 16$ and $UQ = 30$. (not drawn to scale)

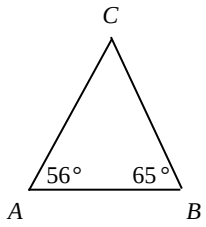


True or False:

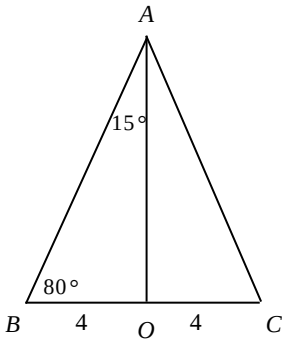
3. The median and altitude of a triangle can never be the same line segment.

4. Identify the longest side of ΔABC.

Name:_____Date:_____Per:____

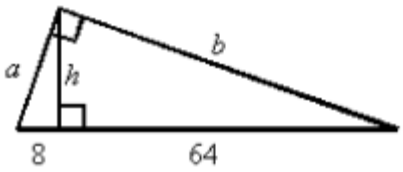


5. Find the appropriate symbol to place in the blank. (not drawn to scale)
*AB*____*AC*



6. In ΔJKL, $JK = 10$, $KL = 9$, and $LJ = 11$. In ΔSTR, $TR = 30$, $RS = 27$, and $ST = 22$. State whether the triangles are similar, and if so, write a similarity statement.

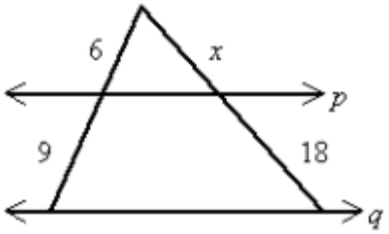
10. Find *a*, *b*, and *h*.



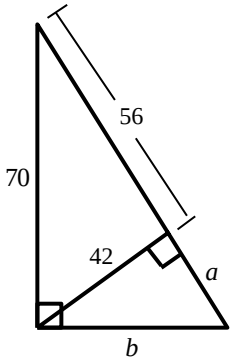
11. Find the value of *x* and *y*.

7. In ΔPQR, $PQ = 8$, $QR = 17$, and $m\angle Q = 36°$. In ΔBCA, $CA = 40$, $AB = 85$, and $m\angle A = 40°$. State whether the triangles are similar, and if so, write a similarity statement.

8. If $p \parallel q$, solve for *x*.



9. Solve for *a* and *b*.



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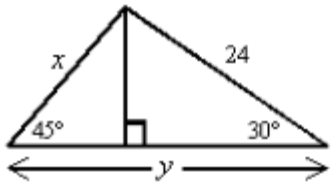
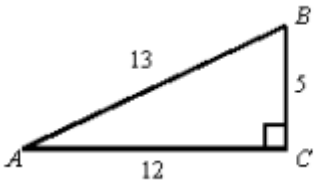
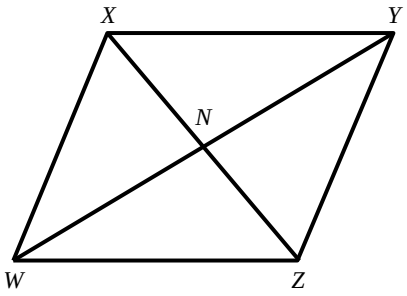


12. Find tan *B* for the right triangle below:



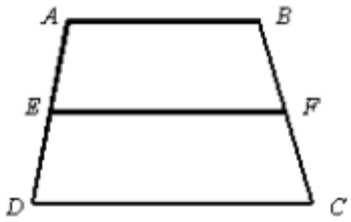
13. Given the following, determine whether quadrilateral *XYZW* must be a parallelogram. Justify your answer. $\overline{XY} \parallel \overline{WZ}$ and $\overline{XW} \parallel \overline{YZ}$.



True or False:

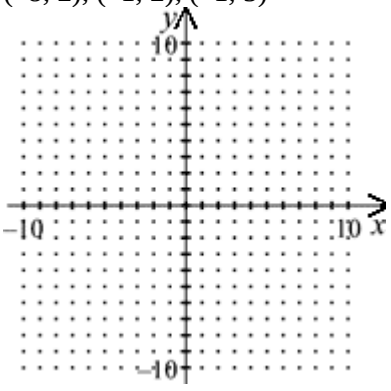
14. All squares are rhombuses.

15. Given: Trapezoid *ABCD* with midsegment $\overline{EF}$. If $AB = 22$ and $DC = 32$, find the length of $\overline{EF}$.



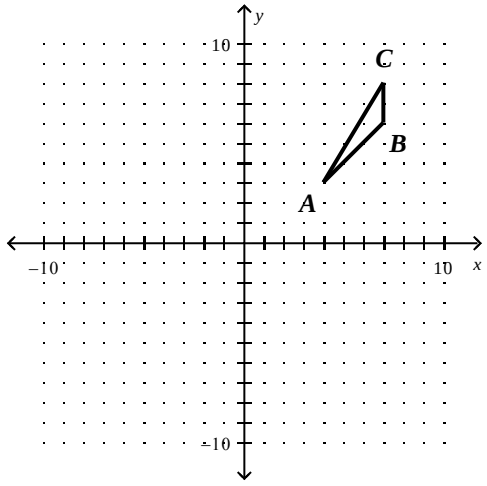
16. A figure is translated using the vector $\langle -1, 8 \rangle$. What translation vector would move the image back to its original position?

17. Graph the triangle whose vertices have the coordinates given below. Then draw its reflection in the *x*-axis.
(–8, 2), (–1, 2), (–1, 5)



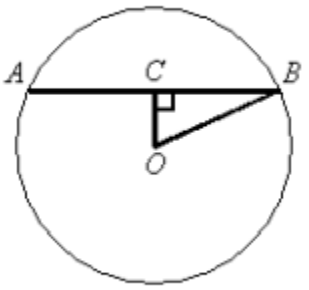
Name:_____Date:_____Per:____

18. Find the image of ΔABC after the glide reflection described.
Translation: $(x, y) \rightarrow (x-1, y)$; Reflection: in $y = 1$

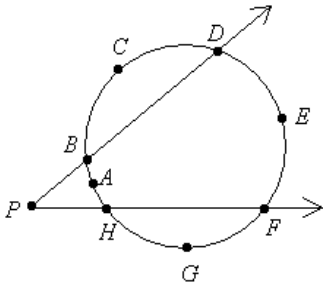


19. If $A = \begin{bmatrix} 4 & -5 \\ 0 & -3 \end{bmatrix}$, find $-6A$.

20. Given circle O with radius 13 and $OC = 5$. Find the length of $\overline{AB}$.

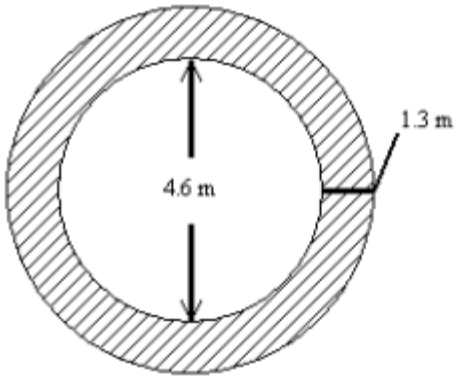


Use the diagram (not drawn to scale) and the given information.



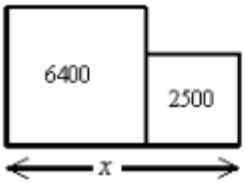
21. $m\widehat{BCD} = 111°$, $m\widehat{DEF} = 100°$, $m\widehat{FGH} = 127°$, and $m\widehat{HAB} = 22°$
Find $m\angle FPD$.

22. The figure below represents the overhead view of a deck surrounding a hot tub. What is the area of the deck? Use $\pi \approx 3.14$.



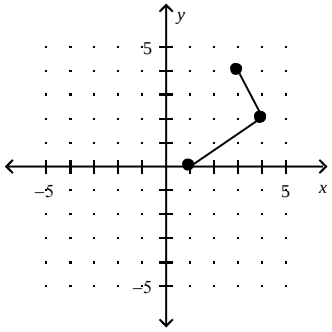
23. The figure below is made up of two squares with the areas shown. What is the length of x?

Name:_____Date:_____Per:____



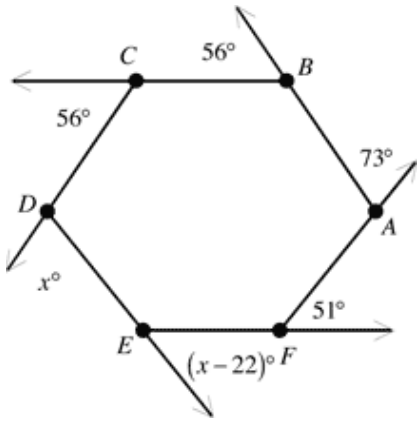
24. A circle has a circumference of 39 meters. Find its radius.

25. The transformation $(x, y) \rightarrow (-y, x)$ is applied to the figure below. Graph the image of the figure under this transformation.

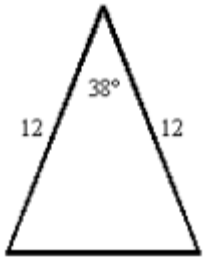


Find the value of *x*. (The figure may not be drawn to scale.)

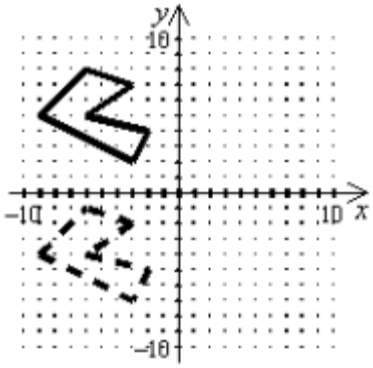
26.



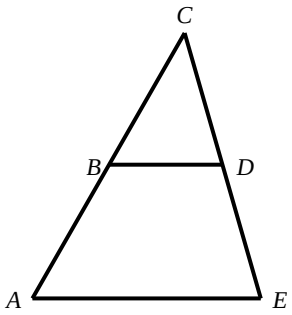
27. What is the measure of each base angle of an isosceles triangle if its vertex angle measures 38 degrees and its 2 congruent sides measure 12 units?



28. The change in position from the solid figure to the dotted figure is best described as a _____ .



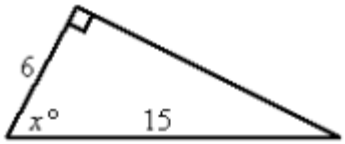
29. Solve for *x* given $BD = \frac{5}{2}x + 5$ and $AE = 8x + 8$. Assume *B* is the midpoint of $\overline{AC}$ and *D* is the midpoint of $\overline{CE}$.



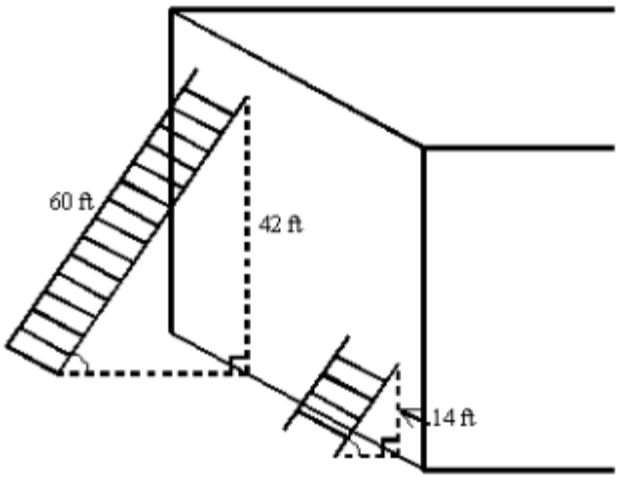
30. If a circle has a diameter of 9 inches, what is the circumference rounded to the nearest whole number? Use $\pi \approx 3.14$.

31. Solve for *x* to the nearest degree.

Name:_____Date:_____Per:____

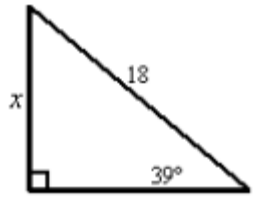


32. Two ladders are leaning against a wall at the same angle as shown.



How long is the shorter ladder?

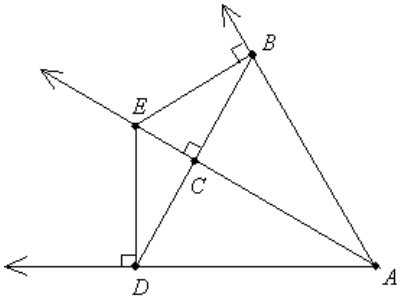
33. What is *x* to the nearest hundredth? (not drawn to scale)



34. Find the sum of the matrices. $\begin{bmatrix} 20 & 1 \\ 22 & 12 \end{bmatrix} + \begin{bmatrix} -5 & -35 \\ 5 & -15 \end{bmatrix}$

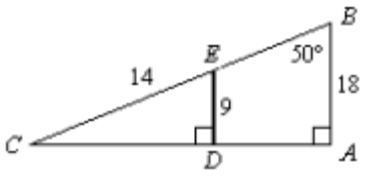
35. Mr. Jones has taken a survey of college students and found that 1 out of 5 students are liberal arts majors. If a college has 7000 students, what is the best estimate of the number of students who are liberal arts majors?

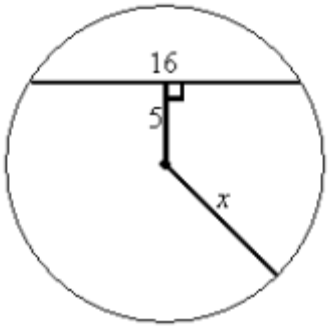
36. Given: $\overrightarrow{AE}$ bisects $\angle DAB$. Find *ED* if $CB = 12$ and $CE = 16$. (not drawn to scale)



37. Use the figure to find $m\angle CED$. The figure is not drawn to scale.

Name:_____Date:_____Per:____

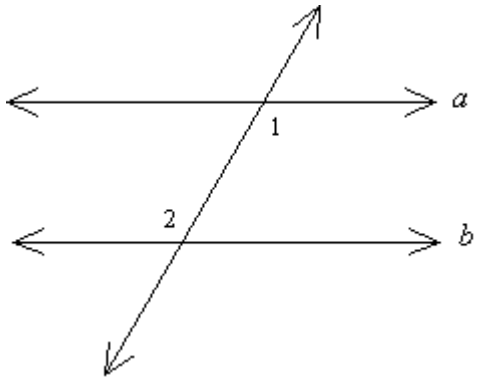




38. Find the value of *x*.

Other

1. Write an indirect proof.
   Given: $m\angle 1 = 122°$ and $m\angle 2 = 121°$
   Prove:Line *a* is not parallel to line *b*.



Name:_____Date:_____Per:____

Geometry - Final Exam Study Guide
Answer Section

MULTIPLE CHOICE

1. ANS: D PTS: 1 DIF: Level B REF: PHGM0402
   NAT: NCTM 9-12.GEO.1.a STA: FL.FLSSS.MTH.07.9-12.MA.912.G.2.2
   TOP: Lesson 4.7 Use Isosceles and Equilateral Triangles KEY: angle | isosceles | exterior angle
   BLM: Comprehension NOT: 978-0-618-65613-4
2. ANS: A PTS: 1 DIF: Level A REF: TASH0022
   TOP: Lesson 4.8 Perform Congruence Transformations KEY: reflection | rotation | translation
   BLM: Knowledge NOT: 978-0-618-65613-4
3. ANS: B PTS: 1 DIF: Level B REF: MLGE0006
   TOP: Lesson 5.1 Midsegment Theorem and Coordinate Proof
   KEY: triangle | coordinate | geometry | position | proof BLM: Comprehension
   NOT: 978-0-618-65613-4
4. ANS: D PTS: 1 DIF: Level B REF: MHGM0087
   NAT: NCTM 9-12.GEO.2.a STA: FL.FLSSS.MTH.07.9-12.MA.912.G.1.1
   TOP: Lesson 5.2 Use Perpendicular Bisectors
   KEY: triangle | perpendicular bisector | concurrency BLM: Knowledge
   NOT: 978-0-618-65613-4
5. ANS: C PTS: 1 DIF: Level B REF: MLGE0351
   STA: FL.FLSSS.MTH.07.9-12.MA.912.G.4.7 TOP: Lesson 5.5 Use Inequalities in a Triangle
   KEY: triangle inequality BLM: Comprehension
   NOT: 978-0-618-65613-4
6. ANS: B PTS: 1 DIF: Level B REF: PHGM0418
   STA: FL.FLSSS.MTH.07.9-12.MA.912.G.4.7 TOP: Lesson 5.5 Use Inequalities in a Triangle
   KEY: triangle inequality BLM: Comprehension
   NOT: 978-0-618-65613-4
7. ANS: B PTS: 1 DIF: Level B REF: DDCM0729
   NAT: NCTM 9-12.PRS.2 STA: FL.FLSSS.MTH.07.9-12.MA.912.T.1.8
   TOP: Lesson 6.1 Ratios, Proportions, and Geometric Mean KEY: ratio | word | proportion
   BLM: Application NOT: 978-0-618-65613-4
8. ANS: D PTS: 1 DIF: Level B REF: MIM10384
   STA: FL.FLSSS.MTH.07.9-12.MA.912.G.4.5
   TOP: Lesson 6.2 Use Proportions to Solve Geometry Problems KEY: proportion | triangle | length | missing
   BLM: Comprehension NOT: 978-0-618-65613-4
9. ANS: A PTS: 1 DIF: Level B REF: MIM10385
   STA: FL.FLSSS.MTH.07.9-12.MA.912.G.4.5
   TOP: Lesson 6.2 Use Proportions to Solve Geometry Problems KEY: proportion | triangle | length | missing
   BLM: Comprehension NOT: 978-0-618-65613-4
10. ANS: C PTS: 1 DIF: Level B REF: MC100087
    NAT: NCTM 9-12.MEA.1.aTOP: Lesson 6.2 Use Proportions to Solve Geometry Problems
    KEY: ratio | word | proportion BLM: Application NOT: 978-0-618-65613-4
11. ANS: C PTS: 1 DIF: Level C REF: MLP20024
    NAT: NCTM 9-12.GEO.1.b TOP: Lesson 6.3 Use Similar Polygons
    KEY: figure | similar | polygon BLM: Comprehension
    NOT: 978-0-618-65613-4

12. ANS: D PTS: 1 DIF: Level B REF: DBXM1016
NAT: NCTM 9-12.GEO.1.b
STA: FL.FLSSS.MTH.07.9-12.MA.912.G.2.3 | FL.FLSSS.MTH.07.9-12.MA.912.G.4.4 | FL.FLSSS.MTH.07.9-12.MA.912.G.4.6 TOP: Lesson 6.3 Use Similar Polygons
KEY: proportion | similar | triangle BLM: Comprehension
NOT: 978-0-618-65613-4

13. ANS: C PTS: 1 DIF: Level B REF: MLA10071
NAT: NCTM 9-12.GEO.1.b
STA: FL.FLSSS.MTH.07.9-12.MA.912.G.2.3 | FL.FLSSS.MTH.07.9-12.MA.912.G.4.4 | FL.FLSSS.MTH.07.9-12.MA.912.G.4.6 TOP: Lesson 6.3 Use Similar Polygons
KEY: solve | proportion | similar | triangle BLM: Comprehension
NOT: 978-0-618-65613-4

14. ANS: D PTS: 1 DIF: Level B REF: PHGM1023
STA: FL.FLSSS.MTH.07.9-12.MA.912.G.4.5
TOP: Lesson 6.6 Use Proportionality Theorems
KEY: proportion | similar | triangle | parallel | side-splitter BLM: Knowledge
NOT: 978-0-618-65613-4

15. ANS: B PTS: 1 DIF: Level B REF: MLGE0149
TOP: Lesson 6.7 Perform Similarity Transformations KEY: dilation
BLM: Knowledge NOT: 978-0-618-65613-4

16. ANS: A PTS: 1 DIF: Level B REF: MLGE0377
TOP: Lesson 6.7 Perform Similarity Transformations KEY: dilation
BLM: Knowledge NOT: 978-0-618-65613-4

17. ANS: D PTS: 1 DIF: Level A REF: MLGE0378
STA: FL.FLSSS.MTH.07.9-12.MA.912.G.5.1
TOP: Lesson 7.1 Apply the Pythagorean Theorem KEY: Pythagorean Theorem | right triangles
BLM: Knowledge NOT: 978-0-618-65613-4

18. ANS: A PTS: 1 DIF: Level B REF: MGEO0018
STA: FL.FLSSS.MTH.07.9-12.MA.912.G.5.1
TOP: Lesson 7.1 Apply the Pythagorean Theorem
KEY: solve | word | right triangles | Pythagorean Theorem BLM: Application
NOT: 978-0-618-65613-4

19. ANS: D PTS: 1 DIF: Level B REF: DITT0026
NAT: NCTM 9-12.GEO.1.a TOP: Lesson 7.2 Use the Converse of the Pythagorean Theorem
KEY: right triangles | Pythagorean Theorem converse BLM: Knowledge
NOT: 978-0-618-65613-4

20. ANS: C PTS: 1 DIF: Level B REF: BMGM0291
NAT: NCTM 9-12.GEO.1.a TOP: Lesson 7.2 Use the Converse of the Pythagorean Theorem
KEY: word | classifying triangles BLM: Knowledge NOT: 978-0-618-65613-4

21. ANS: C PTS: 1 DIF: Level B REF: DBXM1015
STA: FL.FLSSS.MTH.07.9-12.MA.912.G.2.5 | FL.FLSSS.MTH.07.9-12.MA.912.G.5.3
TOP: Lesson 7.4 Special Right Triangles KEY: special right triangles | 30-60-90 triangle
BLM: Comprehension NOT: 978-0-618-65613-4

22. ANS: B PTS: 1 DIF: Level B REF: PMG80819
NAT: NCTM 9-12.GEO.1.d | NCTM 9-12.PRS.2
STA: FL.FLSSS.MTH.07.9-12.MA.912.T.1.8 | FL.FLSSS.MTH.07.9-12.MA.912.T.2.1 | FL.FLSSS.MTH.07.9-12.MA.912.T.2.2 TOP: Lesson 7.5 Apply the Tangent Ratio
KEY: word | tangent ratio BLM: Application NOT: 978-0-618-65613-4

23. ANS: B PTS: 1 DIF: Level A REF: MHGM0136

STA: FL.FLSSS.MTH.07.9-12.MA.912.T.2.1
TOP: Lesson 7.6 Apply the Sine and Cosine Ratios
KEY: sine and cosine ratios | trigonometric ratios BLM: Knowledge
NOT: 978-0-618-65613-4

24. ANS: B PTS: 1 DIF: Level B REF: MHA10127
NAT: NCTM 9-12.GEO.1.d
STA: FL.FLSSS.MTH.07.9-12.MA.912.G.2.2 | FL.FLSSS.MTH.07.9-12.MA.912.T.2.1
TOP: Lesson 7.7 Solve Right Triangles KEY: solving right triangles | sine and cosine ratios
BLM: Knowledge NOT: 978-0-618-65613-4

25. ANS: D PTS: 1 DIF: Level B REF: MOT70179
STA: FL.FLSSS.MTH.07.9-12.MA.912.G.2.2
TOP: Lesson 8.1 Find Angle Measures in Polygons
KEY: diagonals | sum | interior angle measures of polygons BLM: Application
NOT: 978-0-618-65613-4

26. ANS: D PTS: 1 DIF: Level B REF: MHN90085
NAT: NCTM 9-12.GEO.1.a
STA: FL.FLSSS.MTH.07.9-12.MA.912.G.2.2 | FL.FLSSS.MTH.07.9-12.MA.912.G.4.6
TOP: Lesson 8.2 Use Properties of Parallelograms KEY: angle measure | parallelogram | diagonals
BLM: Application NOT: 978-0-618-65613-4

27. ANS: A PTS: 1 DIF: Level B REF: MLGE0400
NAT: NCTM 9-12.GEO.1.a STA: FL.FLSSS.MTH.07.9-12.MA.912.G.2.5
TOP: Lesson 8.2 Use Properties of Parallelograms KEY: side lengths | parallelogram
BLM: Application NOT: 978-0-618-65613-4

28. ANS: C PTS: 1 DIF: Level A REF: TASH0019
NAT: NCTM 9-12.GEO.1.a STA: FL.FLSSS.MTH.07.9-12.MA.912.G.3.2
TOP: Lesson 8.4 Properties of Rhombuses, Rectangles, and Squares
KEY: property | quadrilateral | geometric figure BLM: Knowledge
NOT: 978-0-618-65613-4

29. ANS: A PTS: 1 DIF: Level B REF: MC100231
TOP: Lesson 8.5 Use Properties of Trapezoids and Kites
KEY: vertex | coordinate geometry | isosceles trapezoid BLM: Application
NOT: 978-0-618-65613-4

30. ANS: C PTS: 1 DIF: Level B REF: MGEO0011
NAT: NCTM 9-12.GEO.2.a | NCTM 9-12.GEO.1.a
STA: FL.FLSSS.MTH.07.9-12.MA.912.A.3.9 | FL.FLSSS.MTH.07.9-12.MA.912.G.1.1 | FL.FLSSS.MTH.07.9-12.MA.912.G.3.1 | FL.FLSSS.MTH.07.9-12.MA.912.G.3.2
TOP: Lesson 8.6 Identify Special Quadrilaterals
KEY: slope | identify | distance formula | quadrilateral BLM: Comprehension
NOT: 978-0-618-65613-4

31. ANS: B PTS: 1 DIF: Level B REF: MIM20279
NAT: NCTM 9-12.GEO.1.a STA: FL.FLSSS.MTH.07.9-12.MA.912.G.3.2
TOP: Lesson 8.6 Identify Special Quadrilaterals KEY: classify | quadrilateral
BLM: Comprehension NOT: 978-0-618-65613-4

32. ANS: B PTS: 1 DIF: Level A REF: PHGM0003
TOP: Lesson 9.1 Translate Figures and Use Vectors KEY: identify | transformation | isometry
BLM: Knowledge NOT: 978-0-618-65613-4

33. ANS: A PTS: 1 DIF: Level A REF: MLGM0065
TOP: Lesson 9.2 Use Properties of Matrices KEY: matrix | polygon
BLM: Knowledge NOT: 978-0-618-65613-4

34. ANS: C PTS: 1 DIF: Level B REF: DZFM0518
NAT: NCTM 9-12.NOP.3.a | NCTM 9-12.NOP.2.b STA: FL.FLSSS.MTH.07.9-12.MA.912.D.8.1
TOP: Lesson 9.2 Use Properties of Matrices KEY: matrix | multiply
BLM: Knowledge NOT: 978-0-618-65613-4

35. ANS: C PTS: 1 DIF: Level B REF: MHGM0140
TOP: Lesson 9.3 Perform Reflections KEY: reflection BLM: Knowledge
NOT: 978-0-618-65613-4

36. ANS: D PTS: 1 DIF: Level A REF: MLGE0331
TOP: Lesson 9.4 Perform Rotations KEY: reflection | rotation | translation | transformation
BLM: Knowledge NOT: 978-0-618-65613-4

37. ANS: C PTS: 1 DIF: Level B REF: MGEO0035
TOP: Lesson 9.5 Apply Compositions of Transformations KEY: glide reflection
BLM: Comprehension NOT: 978-0-618-65613-4

38. ANS: A PTS: 1 DIF: Level A REF: HLGM0525
TOP: Lesson 9.6 Identify Symmetry KEY: line | symmetry | hexagon | equiangular
BLM: Knowledge NOT: 978-0-618-65613-4

39. ANS: A PTS: 1 DIF: Level B REF: MLGE0138
TOP: Lesson 9.6 Identify Symmetry KEY: line | symmetry
BLM: Knowledge NOT: 978-0-618-65613-4

40. ANS: C PTS: 1 DIF: Level A REF: POW70028
STA: FL.FLSSS.MTH.07.9-12.MA.912.G.6.2 TOP: Lesson 10.1 Use Properties of Tangents
KEY: circle | chord BLM: Knowledge NOT: 978-0-618-65613-4

41. ANS: D PTS: 1 DIF: Level C REF: PHGM1208
NAT: NCTM 9-12.MEA.2.cTOP: Lesson 10.1 Use Properties of Tangents
KEY: circle | tangent | circumscribe BLM: Synthesis NOT: 978-0-618-65613-4

42. ANS: B PTS: 1 DIF: Level B REF: MLGE0100
STA: FL.FLSSS.MTH.07.9-12.MA.912.G.6.4 TOP: Lesson 10.2 Find Arc Measures
KEY: circle | angle | triangle | arc length BLM: Comprehension
NOT: 978-0-618-65613-4

43. ANS: B PTS: 1 DIF: Level B REF: MHGM0068
STA: FL.FLSSS.MTH.07.9-12.MA.912.G.6.2 | FL.FLSSS.MTH.07.9-12.MA.912.G.6.4
TOP: Lesson 10.2 Find Arc Measures KEY: degree | measure | clock
BLM: Analysis NOT: 978-0-618-65613-4

44. ANS: A PTS: 1 DIF: Level B REF: MLGE0103
STA: FL.FLSSS.MTH.07.9-12.MA.912.G.6.4
TOP: Lesson 10.4 Use Inscribed Angles and Polygons
KEY: circle | angle | arc length | measure | inscribed | degrees BLM: Analysis
NOT: 978-0-618-65613-4

45. ANS: B PTS: 1 DIF: Level B REF: MLGE0247
NAT: NCTM 9-12.MEA.2.cTOP: Lesson 10.4 Use Inscribed Angles and Polygons
KEY: circle | angle | quadrilateral | inscribed BLM: Application
NOT: 978-0-618-65613-4

46. ANS: D PTS: 1 DIF: Level B REF: DJAM1012
STA: FL.FLSSS.MTH.07.9-12.MA.912.G.6.4
TOP: Lesson 10.5 Apply Other Angle Relationships in Circles KEY: angle | arc | degrees
BLM: Application NOT: 978-0-618-65613-4

47. ANS: C PTS: 1 DIF: Level B REF: BMGM0103
STA: FL.FLSSS.MTH.07.9-12.MA.912.G.5.1 | FL.FLSSS.MTH.07.9-12.MA.912.G.6.2

TOP: Lesson 10.6 Find Segment Lengths in Circles KEY: circle | diameter | secant | segment
BLM: Comprehension NOT: 978-0-618-65613-4

48. ANS: A PTS: 1 DIF: Level A REF: XMOD0509
TOP: Lesson 10.6 Find Segment Lengths in Circles KEY: circle | chord | length | chords
BLM: Knowledge NOT: 978-0-618-65613-4

49. ANS: C PTS: 1 DIF: Level A REF: DBYM0909
STA: FL.FLSSS.MTH.07.9-12.MA.912.G.6.6
TOP: Lesson 10.7 Write and Graph Equations of Circles KEY: equation | circle | radius
BLM: Knowledge NOT: 978-0-618-65613-4

50. ANS: B PTS: 1 DIF: Level A REF: DBIM0719
STA: FL.FLSSS.MTH.07.9-12.MA.912.G.6.6
TOP: Lesson 10.7 Write and Graph Equations of Circles KEY: equation | identify | circle | radius | center
BLM: Knowledge NOT: 978-0-618-65613-4

51. ANS: A PTS: 1 DIF: Level B REF: ABBM0922
NAT: NCTM 9-12.MEA.2.b STA: FL.FLSSS.MTH.07.9-12.MA.912.G.2.5
TOP: Lesson 11.1 Areas of Triangles and Parallelograms
KEY: word | subtract | area | rectangle | two-step BLM: Application
NOT: 978-0-618-65613-4

52. ANS: B PTS: 1 DIF: Level B REF: MLGE0300
NAT: NCTM 9-12.MEA.2.b STA: FL.FLSSS.MTH.07.9-12.MA.912.G.2.5
TOP: Lesson 11.2 Areas of Trapezoids, Rhombuses, and Kites KEY: area | polygon | trapezoid
BLM: Comprehension NOT: 978-0-618-65613-4

53. ANS: D PTS: 1 DIF: Level B REF: PHGM0509
NAT: NCTM 9-12.MEA.2.b STA: FL.FLSSS.MTH.07.9-12.MA.912.G.2.5
TOP: Lesson 11.2 Areas of Trapezoids, Rhombuses, and Kites KEY: word | area | trapezoid | solve
BLM: Application NOT: 978-0-618-65613-4

54. ANS: C PTS: 1 DIF: Level B REF: MLGE0428
STA: FL.FLSSS.MTH.07.9-12.MA.912.G.2.7
TOP: Lesson 11.3 Perimeter and Area of Similar Figures KEY: area | polygon | ratio of similarity
BLM: Knowledge NOT: 978-0-618-65613-4

55. ANS: B PTS: 1 DIF: Level B REF: MHGM0104
NAT: NCTM 9-12.MEA.2.b | NCTM 9-12.PRS.2
STA: FL.FLSSS.MTH.07.9-12.MA.912.G.2.5 | FL.FLSSS.MTH.07.9-12.MA.912.T.1.8
TOP: Lesson 11.3 Perimeter and Area of Similar Figures KEY: word | proportion
BLM: Application NOT: 978-0-618-65613-4

56. ANS: C PTS: 1 DIF: Level A REF: MGEO0031
NAT: NCTM 9-12.MEA.2.b TOP: Lesson 11.5 Areas of Circles and Sectors
KEY: circle | area BLM: Knowledge NOT: 978-0-618-65613-4

57. ANS: D PTS: 1 DIF: Level A REF: MLA20277
NAT: NCTM 9-12.MEA.2.b TOP: Lesson 11.4 Circumference and Arc Length
KEY: circle | area | sector BLM: Knowledge NOT: 978-0-618-65613-4

58. ANS: D PTS: 1 DIF: Level A REF: OTGS0035
NAT: NCTM 9-12.MEA.2.b STA: FL.FLSSS.MTH.07.9-12.MA.912.G.2.5
TOP: Lesson 11.6 Areas of Regular Polygons KEY: area | triangle | equilateral
BLM: Knowledge NOT: 978-0-618-65613-4

59. ANS: A PTS: 1 DIF: Level B REF: PHGM1119
NAT: NCTM 9-12.MEA.2.b STA: FL.FLSSS.MTH.07.9-12.MA.912.G.2.5
TOP: Lesson 11.6 Areas of Regular Polygons KEY: area | polygon | trigonometry | regular

BLM: Knowledge NOT: 978-0-618-65613-4

60. ANS: A PTS: 1 DIF: Level B REF: PHGM1121
NAT: NCTM 9-12.MEA.2.b STA: FL.FLSSS.MTH.07.9-12.MA.912.G.2.5
TOP: Lesson 11.6 Areas of Regular Polygons KEY: area | polygon | trigonometry | regular
BLM: Knowledge NOT: 978-0-618-65613-4

NUMERIC RESPONSE

1. ANS: 222

PTS: 1 DIF: Level B REF: MC100100 NAT: NCTM 9-12.REP.1 | NCTM 9-12.PRS.2
STA: FL.FLSSS.MTH.07.9-12.MA.912.T.1.8
TOP: Lesson 6.4 Prove Triangles Similar by AA
KEY: word | proportion | similar | measure | indirect BLM: Application
NOT: 978-0-618-65613-4

SHORT ANSWER

1. ANS:
(–1, –1)

PTS: 1 DIF: Level B REF: MLGE0363 NAT: NCTM 9-12.GEO.2.a
STA: FL.FLSSS.MTH.07.9-12.MA.912.G.1.1 TOP: Lesson 5.2 Use Perpendicular Bisectors
KEY: triangle | perpendicular bisector | concurrency BLM: Knowledge
NOT: 978-0-618-65613-4

2. ANS:
34

PTS: 1 DIF: Level B REF: PHGM0410
STA: FL.FLSSS.MTH.07.9-12.MA.912.G.4.2 | FL.FLSSS.MTH.07.9-12.MA.912.G.5.1
TOP: Lesson 5.3 Use Angle Bisectors of Triangles KEY: solve | angle bisector
BLM: Application NOT: 978-0-618-65613-4

3. ANS:
False

PTS: 1 DIF: Level B REF: MLGE0330 STA: FL.FLSSS.MTH.07.9-12.MA.912.G.4.2
TOP: Lesson 5.4 Use Medians and Altitudes KEY: property | triangle
BLM: Comprehension NOT: 978-0-618-65613-4

4. ANS:
$\overline{AC}$

PTS: 1 DIF: Level B REF: GGEO0505 TOP: Lesson 5.5 Use Inequalities in a Triangle
KEY: angle | triangle | side BLM: Comprehension
NOT: 978-0-618-65613-4

5. ANS:
<

PTS: 1 DIF: Level B REF: XEGS0501

TOP: Lesson 5.6 Inequalities in Two Triangles and Indirect Proof
KEY: angle | triangle | order | side | Hinge Theorem BLM: Knowledge
NOT: 978-0-618-65613-4

6. ANS:
not similar

PTS: 1 DIF: Level B REF: PHGM1002 NAT: NCTM 9-12.GEO.1.b
TOP: Lesson 6.5 Prove Triangles Similar by SSS and SAS KEY: SSS similarity
BLM: Comprehension NOT: 978-0-618-65613-4

7. ANS:
not similar

PTS: 1 DIF: Level B REF: PHGM1001 NAT: NCTM 9-12.GEO.1.b
TOP: Lesson 6.5 Prove Triangles Similar by SSS and SAS KEY: similar | SAS
BLM: Comprehension NOT: 978-0-618-65613-4

8. ANS:
12

PTS: 1 DIF: Level B REF: AGEO0610 STA: FL.FLSSS.MTH.07.9-12.MA.912.G.4.5
TOP: Lesson 6.6 Use Proportionality Theorems KEY: similar | triangle | length | side
BLM: Knowledge NOT: 978-0-618-65613-4

9. ANS:
$a = \frac{63}{2}$; $b = \frac{105}{2}$

PTS: 1 DIF: Level B REF: MLGE0424 NAT: NCTM 9-12.GEO.1.d
STA: FL.FLSSS.MTH.07.9-12.MA.912.T.2.1 TOP: Lesson 7.3 Use Similar Right Triangles
KEY: similar right triangles | geometric mean BLM: Knowledge
NOT: 978-0-618-65613-4

10. ANS:
$a = 24$, $b = 48\sqrt{2}$, $h = 16\sqrt{2}$

PTS: 1 DIF: Level B REF: SXAM0042 NAT: NCTM 9-12.GEO.1.b
STA: FL.FLSSS.MTH.07.9-12.MA.912.G.2.3 | FL.FLSSS.MTH.07.9-12.MA.912.G.4.4 | FL.FLSSS.MTH.07.9-12.MA.912.G.5.1 | FL.FLSSS.MTH.07.9-12.MA.912.G.5.2
TOP: Lesson 7.3 Use Similar Right Triangles KEY: similar right triangles | geometric mean
BLM: Knowledge NOT: 978-0-618-65613-4

11. ANS:
$x = 12\sqrt{2}$, $y = 12 + 12\sqrt{3}$ or $12(1 + \sqrt{3})$

PTS: 1 DIF: Level A REF: AGEO0706 NAT: NCTM 9-12.GEO.1.a
STA: FL.FLSSS.MTH.07.9-12.MA.912.G.5.3 TOP: Lesson 7.4 Special Right Triangles
KEY: special right triangles | 45-45-90 triangle | 30-60-90 triangle
BLM: Knowledge NOT: 978-0-618-65613-4

12. ANS:
$\frac{12}{5}$

PTS: 1 DIF: Level A REF: MLGM0046 STA: FL.FLSSS.MTH.07.9-12.MA.912.T.2.1
TOP: Lesson 7.5 Apply the Tangent Ratio KEY: tangent ratio
BLM: Knowledge NOT: 978-0-618-65613-4

13. ANS:
Yes. If both pairs of opposite sides of a quadrilateral are parallel, then the quadrilateral is a parallelogram.

PTS: 1 DIF: Level B REF: AD010115
TOP: Lesson 8.3 Show that a Quadrilateral is a Parallelogram
KEY: parallelogram | quadrilateral | justify | diagonals BLM: Application
NOT: 978-0-618-65613-4

14. ANS:
True

PTS: 1 DIF: Level B REF: MIM20276 NAT: NCTM 9-12.GEO.1.a
STA: FL.FLSSS.MTH.07.9-12.MA.912.G.3.2
TOP: Lesson 8.4 Properties of Rhombuses, Rectangles, and Squares
KEY: square | rectangle | classify | quadrilateral | kite BLM: Application
NOT: 978-0-618-65613-4

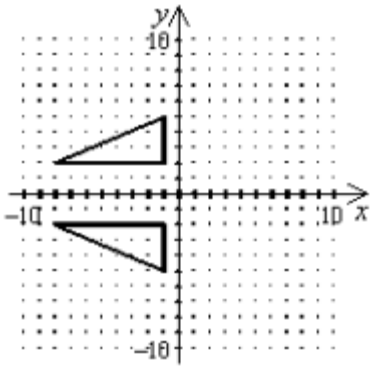
15. ANS:
27

PTS: 1 DIF: Level B REF: MHGM0064
NAT: NCTM 9-12.GEO.1.a TOP: Lesson 8.5 Use Properties of Trapezoids and Kites
KEY: midsegment | trapezoid BLM: Application NOT: 978-0-618-65613-4

16. ANS:
$\langle 1, -8 \rangle$

PTS: 1 DIF: Level B REF: MLGE0339
TOP: Lesson 9.1 Translate Figures and Use Vectors KEY: point | coordinate | translation
BLM: Knowledge NOT: 978-0-618-65613-4

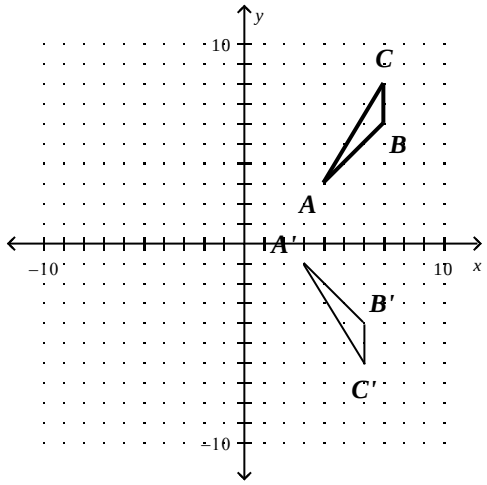
17. ANS:



PTS: 1 DIF: Level A REF: MLGE0335
NAT: NCTM 9-12.GEO.4.a | NCTM 9-12.GEO.2.a | NCTM 9-12.GEO.3.a
STA: FL.FLSSS.MTH.07.9-12.MA.912.G.2.6 TOP: Lesson 9.3 Perform Reflections

KEY: graph | triangle | vertices | coordinate | reflection BLM: Knowledge
NOT: 978-0-618-65613-4

18. ANS:



PTS: 1 DIF: Level B REF: MLGE0358
TOP: Lesson 9.5 Apply Compositions of Transformations KEY: glide reflection
BLM: Knowledge NOT: 978-0-618-65613-4

19. ANS:

$$\begin{bmatrix} -24 & 30 \\ 0 & 18 \end{bmatrix}$$

PTS: 1 DIF: Level A REF: XEA22301
NAT: NCTM 9-12.NOP.2.b | NCTM 9-12.NOP.3.a STA: FL.FLSSS.MTH.07.9-12.MA.912.D.8.1
TOP: Lesson 9.7 Identify and Perform Dilations KEY: matrix | multiply | constant
BLM: Knowledge NOT: 978-0-618-65613-4

20. ANS:
24

PTS: 1 DIF: Level B REF: MGEO0023
STA: FL.FLSSS.MTH.07.9-12.MA.912.G.5.1 | FL.FLSSS.MTH.07.9-12.MA.912.G.6.2
TOP: Lesson 10.3 Apply Properties of Chords KEY: circle | chord | Pythagorean
BLM: Application NOT: 978-0-618-65613-4

21. ANS:
39°

PTS: 1 DIF: Level B REF: MLGE0261 STA: FL.FLSSS.MTH.07.9-12.MA.912.G.6.4
TOP: Lesson 10.5 Apply Other Angle Relationships in Circles KEY: angle | measure | arc
BLM: Application NOT: 978-0-618-65613-4

22. ANS:
$24.0838\ \text{m}^2$

PTS: 1 DIF: Level B REF: MLGE0272 NAT: NCTM 9-12.MEA.2.b
TOP: Lesson 11.5 Areas of Circles and Sectors KEY: word | circle | area

BLM: Application NOT: 978-0-618-65613-4

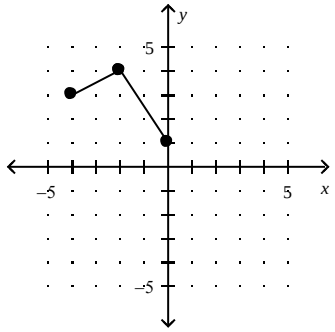
23. ANS:
130

PTS: 1 DIF: Level B REF: BD011106 NAT: NCTM 9-12.MEA.2.b
STA: FL.FLSSS.MTH.07.9-12.MA.912.G.2.5
TOP: Lesson 11.1 Areas of Triangles and Parallelograms KEY: square | model | area | composite | side
BLM: Comprehension NOT: 978-0-618-65613-4

24. ANS:
6.21 m

PTS: 1 DIF: Level B REF: MHGM0102
TOP: Lesson 11.4 Circumference and Arc Length KEY: circle | diameter | radius | circumference
BLM: Comprehension NOT: 978-0-618-65613-4

25. ANS:



PTS: 1 DIF: Level B REF: MCT90031 TOP: Lesson 9.4 Perform Rotations
KEY: coordinate | rotation | transformation BLM: Application
NOT: 978-0-618-65613-4

26. ANS:
73

PTS: 1 DIF: Level B REF: MLPA0713
TOP: Lesson 8.1 Find Angle Measures in Polygons KEY: exterior angle measures of polygons
BLM: Application NOT: 978-0-618-65613-4

27. ANS:
71°

PTS: 1 DIF: Level B REF: TASH0121
TOP: Lesson 4.7 Use Isosceles and Equilateral Triangles KEY: angle | triangle | isosceles
BLM: Comprehension NOT: 978-0-618-65613-4

28. ANS:
translation

PTS: 1 DIF: Level B REF: TASH0070
TOP: Lesson 4.8 Perform Congruence Transformations
KEY: reflection | rotation | translation | transformation BLM: Knowledge
NOT: 978-0-618-65613-4

29. ANS:

2
3

PTS: 1 DIF: Level B REF: PHGM0015
TOP: Lesson 5.1 Midsegment Theorem and Coordinate Proof KEY: triangle | midsegment
BLM: Application NOT: 978-0-618-65613-4

30. ANS:
28 in.

PTS: 1 DIF: Level A REF: MLGE0266
TOP: Lesson 11.4 Circumference and Arc Length KEY: circle | circumference
BLM: Knowledge NOT: 978-0-618-65613-4

31. ANS:
66

PTS: 1 DIF: Level A REF: PHGM1106 NAT: NCTM 9-12.GEO.1.d
STA: FL.FLSSS.MTH.07.9-12.MA.912.T.2.1 TOP: Lesson 7.7 Solve Right Triangles
KEY: sine and cosine ratios BLM: Knowledge NOT: 978-0-618-65613-4

32. ANS:
20 ft

PTS: 1 DIF: Level B REF: MLGE0412 NAT: NCTM 9-12.GEO.1.b
STA: FL.FLSSS.MTH.07.9-12.MA.912.G.2.3 | FL.FLSSS.MTH.07.9-12.MA.912.G.4.4
TOP: Lesson 6.4 Prove Triangles Similar by AA KEY: ratio | model | similar | triangle
BLM: Application NOT: 978-0-618-65613-4

33. ANS:
$x = 11.33$

PTS: 1 DIF: Level A REF: MLGE0381 NAT: NCTM 9-12.GEO.1.d
STA: FL.FLSSS.MTH.07.9-12.MA.912.T.2.1
TOP: Lesson 7.6 Apply the Sine and Cosine Ratios KEY: sine and cosine ratios
BLM: Knowledge NOT: 978-0-618-65613-4

34. ANS:
$\begin{bmatrix} 15 & -34 \\ 27 & -3 \end{bmatrix}$

PTS: 1 DIF: Level A REF: PHA20017
NAT: NCTM 9-12.NOP.2.b | NCTM 9-12.NOP.3.a STA: FL.FLSSS.MTH.07.9-12.MA.912.D.8.1
TOP: Lesson 9.2 Use Properties of Matrices KEY: matrix | add
BLM: Knowledge NOT: 978-0-618-65613-4

35. ANS:
1400

PTS: 1 DIF: Level B REF: DITT0072 NAT: NCTM 9-12.PRS.2
STA: FL.FLSSS.MTH.07.9-12.MA.912.T.1.8
TOP: Lesson 6.1 Ratios, Proportions, and Geometric Mean KEY: ratio | word | proportion
BLM: Application NOT: 978-0-618-65613-4

36. ANS:
20

PTS: 1 DIF: Level B REF: PHGM0420
STA: FL.FLSSS.MTH.07.9-12.MA.912.G.4.2 | FL.FLSSS.MTH.07.9-12.MA.912.G.5.1
TOP: Lesson 5.3 Use Angle Bisectors of Triangles KEY: solve | angle bisector
BLM: Application NOT: 978-0-618-65613-4

37. ANS:
50°

PTS: 1 DIF: Level B REF: MIM10386 STA: FL.FLSSS.MTH.07.9-12.MA.912.G.4.5
TOP: Lesson 6.4 Prove Triangles Similar by AA
KEY: proportion | angle | triangle | length | missing BLM: Comprehension
NOT: 978-0-618-65613-4

38. ANS:
9.4

PTS: 1 DIF: Level B REF: PHGM1209 STA: FL.FLSSS.MTH.07.9-12.MA.912.G.5.1
TOP: Lesson 10.3 Apply Properties of Chords KEY: circle | radius | chord
BLM: Analysis NOT: 978-0-618-65613-4

OTHER

1. ANS:
Assume $a \parallel b$. If two parallel lines are cut by a transversal, then alternate interior angles are congruent. This contradicts the given information since $m\angle 1 \neq m\angle 2$. The assumption that $a \parallel b$ is false. Thus lines a and b are not parallel.

PTS: 1 DIF: Level B REF: MLGE0399 NAT: NCTM 9-12.REA.3 | NCTM 9-12.REA.4
STA: FL.FLSSS.MTH.07.9-12.MA.912.D.6.4
TOP: Lesson 5.6 Inequalities in Two Triangles and Indirect Proof
KEY: proof | indirect BLM: Analysis NOT: 978-0-618-65613-4