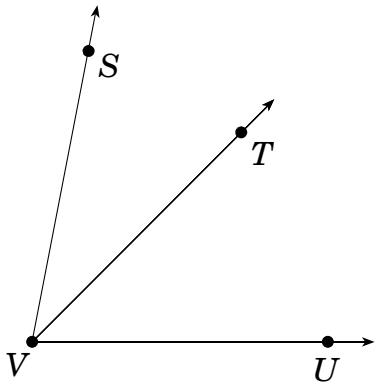
1. Which of the following ***best*** describes what $\angle SVT$ and $\angle TVU$ have in common?



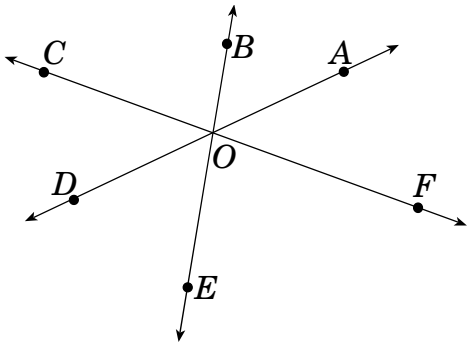
A $\overrightarrow{VT}$

B $\overline{VT}$

C $\overleftrightarrow{VT}$

D V, T

2. Which of the following is a pair of supplementary angles?



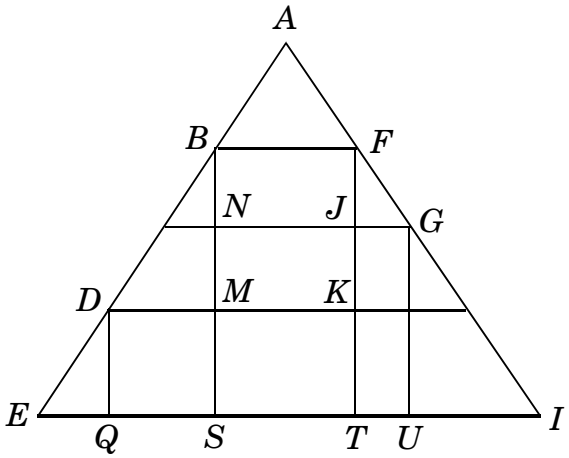
A $\angle BOF$ and $\angle BOA$

B $\angle COD$ and $\angle DOE$

C $\angle COF$ and $\angle AOF$

D $\angle DOE$ and $\angle DOB$

3. In the diagram, which two angles are adjacent?



A $\angle BMD$ and $\angle KMS$

B $\angle MKT$ and $\angle NJT$

C $\angle FJG$ and $\angle NJF$

D $\angle DEQ$ and $\angle TIG$

4. Plane P contains points A, B, and C. A different plane, plane Q, contains points B, C,and D. Which of the following represents the intersection of P and Q?

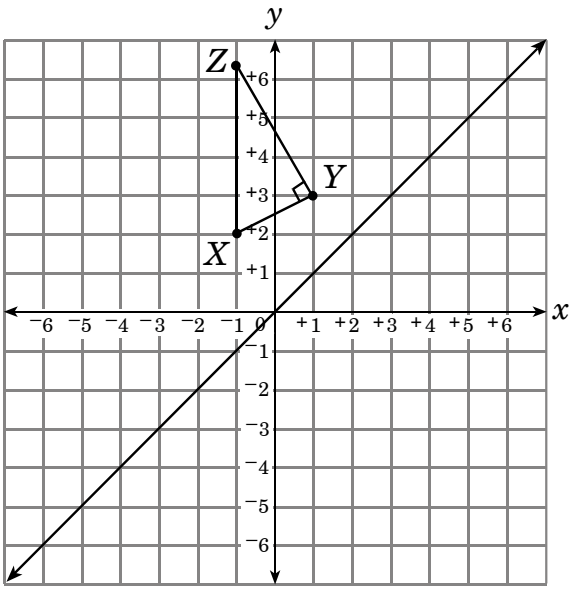
A $\overleftrightarrow{AD}$

B $\overleftrightarrow{BC}$

C $\overline{BC}$

D points B, C, A, and D

5. In the coordinate plane, right triangle XYZ is reflected over the line $y = x$.



What are the coordinates of the vertex of the right angle in $\Delta X'Y'Z'$?

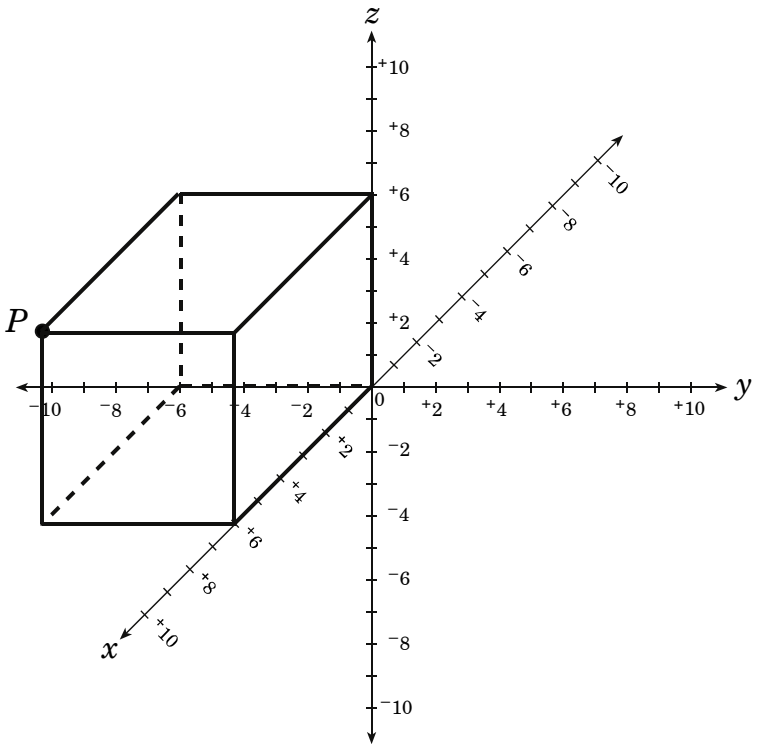
A $(3,1)$

B $(3,0)$

C $(1,{}^{-}3)$

D $(1,{}^{-}2)$

6. In the picture below, what are the coordinates of P?



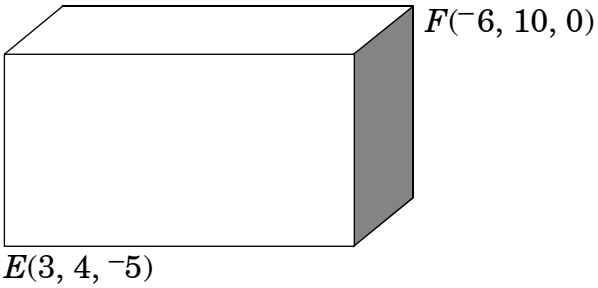
A $(0,6,6)$

B $(^{-}6,0,6)$

C $(^{-}6,6,0)$

D $(6,^{-}6,6)$

7. What are the coordinates of the midpoint of $\overline{EF}$?



A $(4.5, 7, 2.5)$

B $(^{-}1.5, 7, ^{-}2.5)$

C $(4.5, 3, ^{-}2.5)$

D $(^{-}1.5, 3, ^{-}2.5)$

---

8. What is the ***approximate*** distance between the points $(^{-}13, 8)$ and $(206, 196)$ in the *xy*-plane?

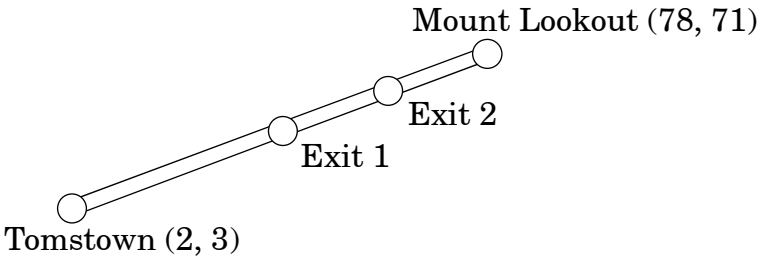
A 219 units

B 269 units

C 289 units

D 299 units

9. Using the map shown, the highway department locates two exits between Tomstown and Mount Lookout. From Tomstown, Exit 1 is halfway to Mount Lookout, and Exit 2 is three-fourths of the way to Mount Lookout.



What are the coordinates for Exit 2?

A $(74, 37)$

B $(59, 54)$

C $(40, 37)$

D $(68, 54)$

---

10. In the *xy*-plane, $(^{-}3, 1)$ and $(4, 3)$ are endpoints of a diameter of a circle. What are the coordinates of the center of the circle?

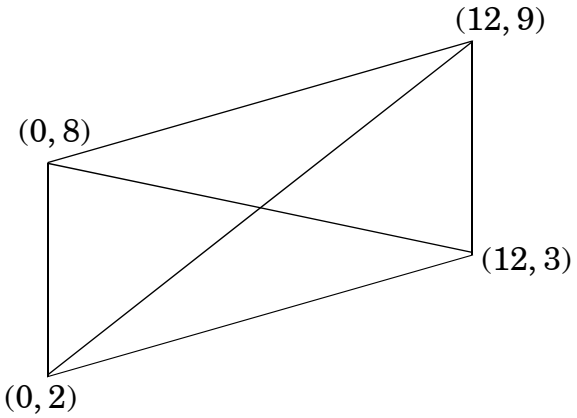
A $\left(\frac{1}{2}, 2\right)$

B $\left(\frac{7}{2}, 1\right)$

C $(1, 4)$

D $\left(^{-}\frac{7}{2}, ^{-}1\right)$

11. The county planning department designs a new park in the shape of a parallelogram. They put in two diagonal walkways.



What will be the coordinates of the intersection of the diagonal walkways?

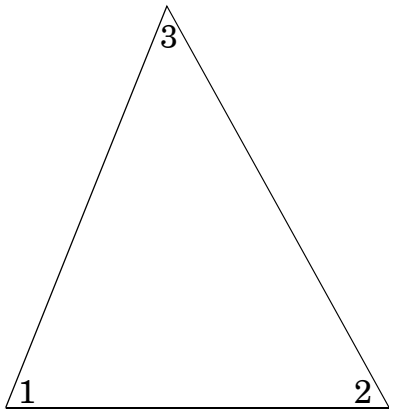
A $(6, 2.5)$

B $(5, 6.5)$

C $(5.5, 6)$

D $(6, 5.5)$

12. Given: $m\angle 1 = 4x$, $m\angle 2 = (3x + 10)$, and $m\angle 3 = (2x + 17)$



What is $m\angle 2$?

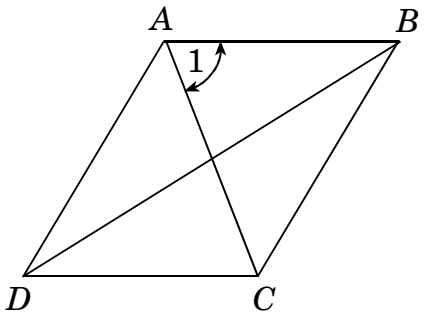
A 61

B 47

C 31

D 17

13. If $ABCD$ is a rhombus and $m\angle ABC = 80$, what is the measure of $\angle 1$?



A 40

B 50

C 80

D 90

14. $ABCD$ is a parallelogram. If $m\angle BCD = (6x - 20)$ and $m\angle DAB = (2x + 80)$, what is the value of x?

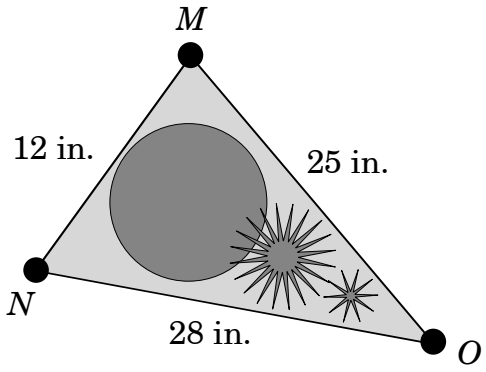
A 8.3

B 12.5

C 15

D 25

15. Which of the following statements about this picture is true?



A $m\angle O > m\angle M$

B $m\angle M > m\angle N$

C $m\angle M < m\angle N$

D $m\angle N < m\angle O$

16. Write the following statement in "if-then" form.

"Two angles that form a linear pair are supplementary."

A If two angles are supplementary, then they form a linear pair.

B If two angles form a linear pair, then they are supplementary.

C If two angles are not supplementary, then they form a linear pair.

D If two angles do not form a linear pair, then they are supplementary.

17. What is the inverse of the statement below?

> If a triangle is scalene, then no two angles are congruent.

A If the triangle is not scalene, then there are two congruent angles.

B If two angles of a triangle are congruent, then the triangle is scalene.

C If there are two congruent angles in a triangle, then the triangle is not scalene.

D If the triangle is not scalene, then there are no congruent angles.

18. What is the contrapositive of the statement below?

> If a triangle is isosceles, then it has two congruent sides.

A If a triangle does not have two congruent sides, then it is not isosceles.

B If a triangle has two congruent sides, then it is isosceles.

C If a triangle is isosceles, then it has two congruent sides.

D A triangle has two congruent sides if and only if it is isosceles.

19. The conditional statement "All 45° angles are acute angles" is true. Based on the conditional statement, which of the following can be concluded from the additional statement "The measure of $\angle A$ is 45"?

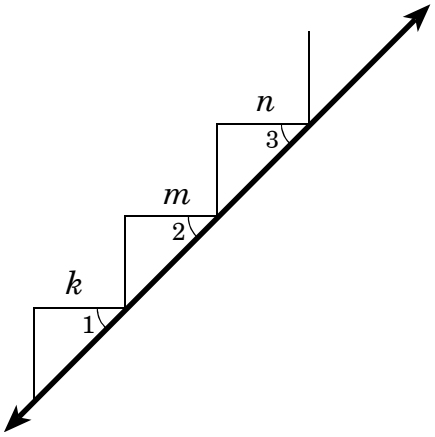
A $\angle A$ is an acute angle.

B $\angle A$ is not an acute angle.

C The complement of $\angle A$ is not an acute angle.

D The supplement of $\angle A$ is not an acute angle.

20. If $k \| m \| n$, which of the statements justifies the conclusion that $\angle 1 \cong \angle 2 \cong \angle 3$?



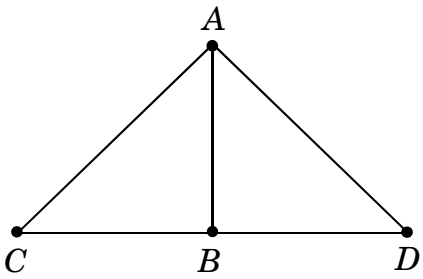
A If $k \| m \| n$ with transversal t, then alternate interior angles are congruent.

B If $k \| m \| n$ with transversal t, then vertical angles are congruent.

C If $k \| m \| n$ with transversal t, then alternate exterior angles are congruent.

D If $k \| m \| n$ with transversal t, then corresponding angles are congruent.

21. It is given that $\overline{AC} \cong \overline{AD}$ and $\angle CAB \cong \angle DAB$. By the reflexive property of congruent segments, $\overline{AB} \cong \overline{AB}$.



Which reason could be used to prove $\Delta ABC \cong \Delta ABD$?

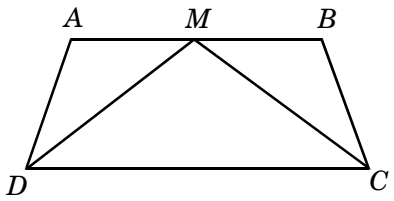
A side-angle-side

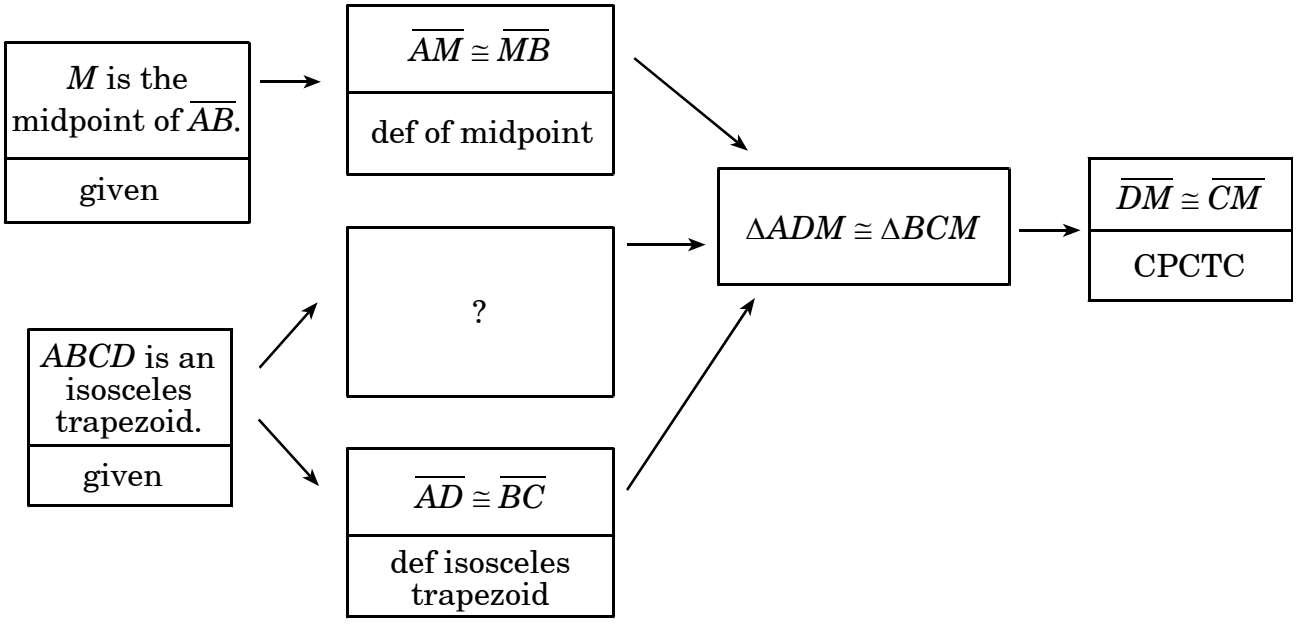
B hypotenuse-leg

C side-side-side

D angle-side-angle

22. Given: $ABCD$ is an isosceles trapezoid. M is the midpoint of $\overline{AB}$.
Prove: $\overline{DM} \cong \overline{CM}$





What is the missing statement and reason that completes the proof shown above?

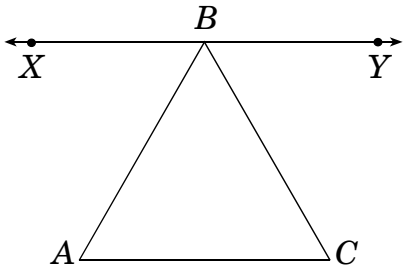
A $\overline{AD} \cong \overline{BC}$; the legs of an isosceles trapezoid are congruent

B $\angle MAD \cong \angle MBC$; the base angles of an isosceles trapezoid are congruent

C $\overline{AM} \cong \overline{BM}$; corresponding parts of congruent triangles are congruent

D $\angle ABC \cong \angle DAB$; if lines are parallel, interior angles on the same side of a transversal are supplementary

23. Given: ΔABC
Prove: $m\angle BAC + m\angle ABC + m\angle BCA = 180$.



Statements	**Reasons**
1) Draw $\overline{XY}$ through B and parallel to $\overline{AC}$.	1) There is exactly one line through a point not on a given line that is parallel to the given line.
2) $\angle XBA$ and $\angle ABY$ form a linear pair.	2) definition of a linear pair
3) $m\angle XBA + m\angle ABY = 180$	3) The sum of the measures of the angles in a linear pair is 180°.
4) $m\angle ABC + m\angle CBY = m\angle ABY$	4) angle addition postulate
5) $m\angle XBA + m\angle ABC + m\angle CBY = 180$	5) substitution
6) $\angle CBY \cong \angle BCA$ and $\angle XBA \cong \angle BAC$	6) _____
7) $m\angle CBY = m\angle BCA$ and $m\angle XBA = m\angle BAC$	7) definition of congruent angles
8) $m\angle BAC + m\angle ABC + m\angle BCA = 180$	8) substitution

What is the reason for statement 6 in the proof shown above?

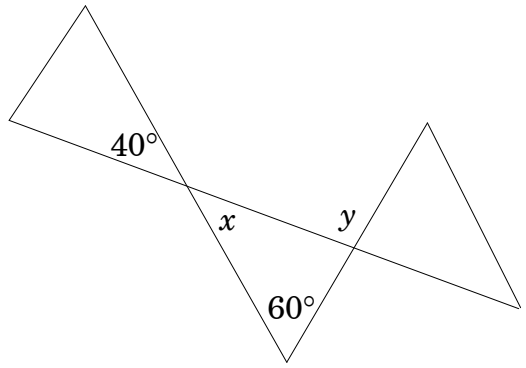
A Alternate interior angles formed by parallel lines and a transversal are congruent.

B Alternate exterior angles formed by parallel lines and a transversal are congruent.

C Vertical angles formed by parallel lines and a transversal are congruent.

D Corresponding angles formed by parallel lines and a transversal are congruent.

24. In the drawing, what is the measure of angle y?



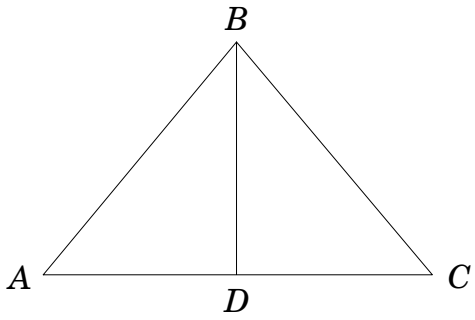
A 40

B 60

C 80

D 100

25. $\overline{BD}$ is the angle bisector of $\angle ABC$.



If $m\angle A = m\angle C = 50$, what is $m\angle ABD$?

A 30

B 40

C 45

D 50

26. $\overrightarrow{OB}$ bisects $\angle AOC$. If $m\angle AOB = (3x + 16)$ and $m\angle BOC = (8x - 14)$, what is $m\angle AOB$?

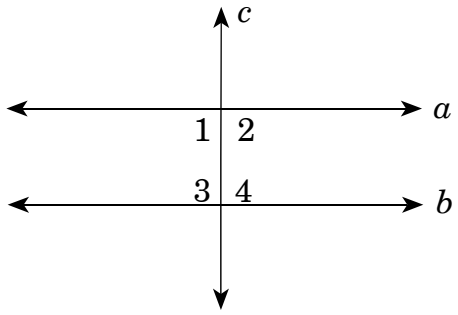
A 18

B 26

C 34

D 48

27. In the figure below, $\angle 1$ is supplementary to $\angle 3$ under which of the following conditions?



A Line a is parallel to line b.

B Line a is parallel to line c.

C Line a is perpendicular to line c.

D Line b is perpendicular to line c.

28. For which type of convex polygon is the sum of the interior angles equal to the sum of the exterior angles, one at each vertex?

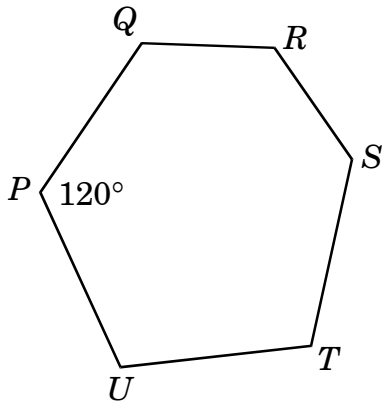
A triangle

B hexagon

C pentagon

D quadrilateral

29. If $m\angle P = 120$, what is the sum of the measures of the remaining interior angles?



A 240

B 360

C 600

D 720

30. The measure of each exterior angle of a regular polygon is 45. How many sides does the polygon have?

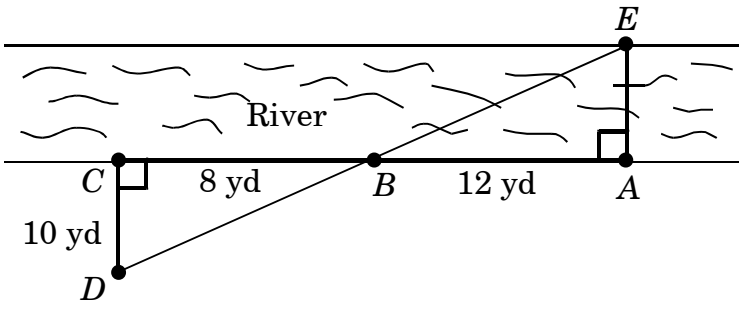
A 4

B 5

C 8

D 9

31. Jill wants to measure the width of a river. She marks distances as shown on the diagram.



Using this information, what is the ***approximate*** width of the river?

A 6.6 yards

B 10 yards

C 12.8 yards

D 15 yards

---

32. What solid is generated if the polygon with vertices $A(3,1)$, $B(9,1)$, and $C(3,7)$ is rotated about $\overline{AC}$?

A cone

B prism

C cylinder

D pyramid

33. What is the ***approximate*** surface area of a regular tetrahedron with edge length 12 cm?

A 166.3 sq cm

B 187.1 sq cm

C 249.4 sq cm

D 498.8 sq cm

34. Which of the following polyhedrons has exactly two congruent bases?

A dodecahedron

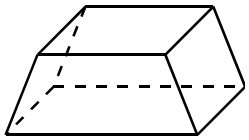
B prism

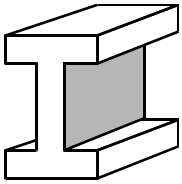
C pyramid

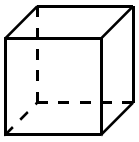
D tetrahedron

35. Which of the following is a regular polyhedron?

A 

B 

C 

D 

36. An isosceles triangle has vertices at $(1,1)$ and $(3,3)$. Which of the following could be the coordinates of the third vertex?

A $(2,1)$

B $(3,2)$

C $(4,1)$

D $(5,1)$

37. Triangle MNO has coordinates $M(0,2)$, $N(1,0)$, and $O(5,1)$. What type of triangle is ΔMNO?

A isosceles

B right

C scalene

D equilateral

38. In triangle XYZ, W is between Y and Z. The coordinates are $X(2,3)$, $Y(5,0)$, $Z(0,0)$, and $W(2,0)$. What is $\overline{XW}$?

A altitude

B angle bisector

C median

D perpendicular bisector of the side

39. What is the ***most specific*** name for quadrilateral $ABCD$ with vertices $A(0,0)$, $B(3,4)$, $C(6,0)$, and $D(3,{}^{-}4)$?

A parallelogram

B rectangle

C rhombus

D trapezoid

40. In rectangle $ABCD$, diagonal $AC = (3x - 9)$ and diagonal $BD = (x + 13)$. What is AC?

A 16

B 18

C 24

D 32

41. In parallelogram $RSTU$, the diagonals intersect at E. If $RE = 10$ and $SU = 16$, what is RT?

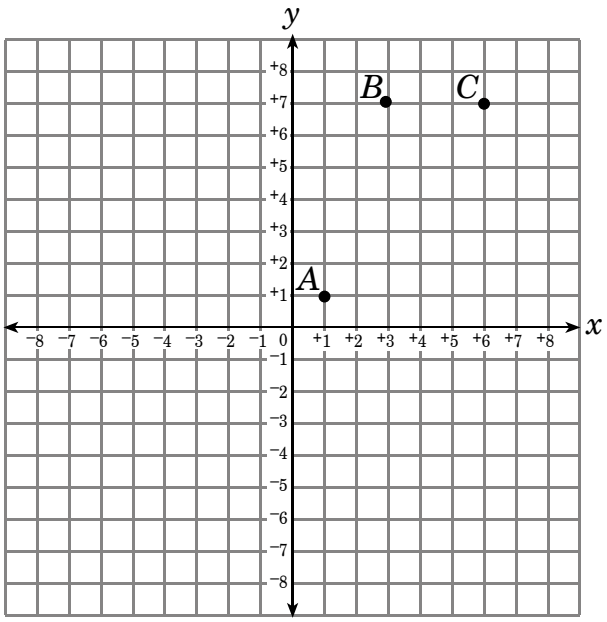
A 20

B 16

C 10

D 8

42. If points *A*, *B*, *C*, and *D* form a trapezoid, how many ordered pairs could represent *D*?



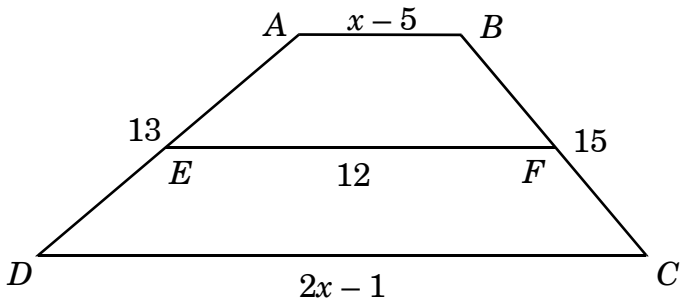
A 1

B 2

C 3

D an infinite number

43. *ABCD* is a trapezoid with median $\overline{EF}$.



What is the length of $\overline{AB}$?

A 5 units

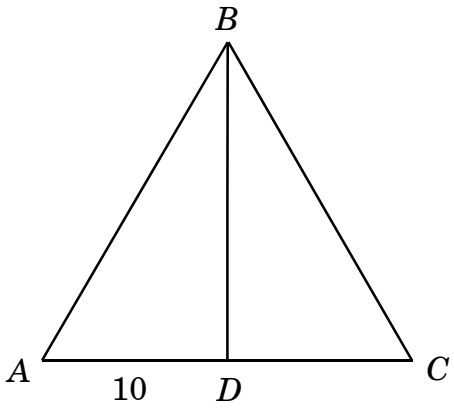
B 7 units

C 9 units

D 10 units

---

44. ΔABC is an isosceles triangle with $AB = BC$ and median $\overline{BD}$. The perimeter of ΔABC is 60 units.



What is *AB*?

A 10 units

B 15 units

C 20 units

D 40 units

45. If the sides of a triangle are 3, 7, and *x*, which of the following ***best*** describes *x*?

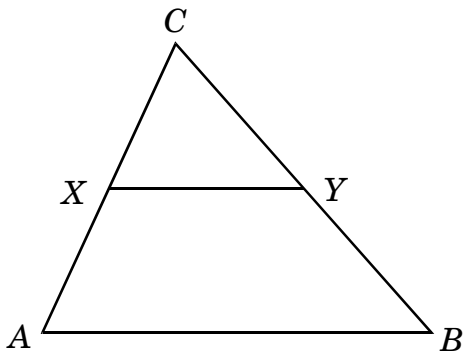
A $4 < x < 10$

B $4 \leq x \leq 10$

C $x < 10$

D $x > 4$

46. In ΔABC, X is the midpoint of $\overline{AC}$ and Y is the midpoint of $\overline{BC}$.



If $m\angle C = 67$ and $m\angle A = 72$, what is $m\angle CYX$?

A 36

B 41

C 67

D 72

47. On a map, the points (2, 1), (5, $^{-}$2), and ($^{-}$3, $^{-}$4) are located on the circular boundary of a town. Which point locates the center of the town?

A $(1, {}^{-}3)$

B $\left(\frac{1}{2}, {}^{-}3\right)$

C $(8, {}^{-}12)$

D $({}^{-}1, 3)$

48. A triangle has interior angles that measure $3x$, $(2x + 15)$, and $(x + 45)$. What is the measure of the largest exterior angle?

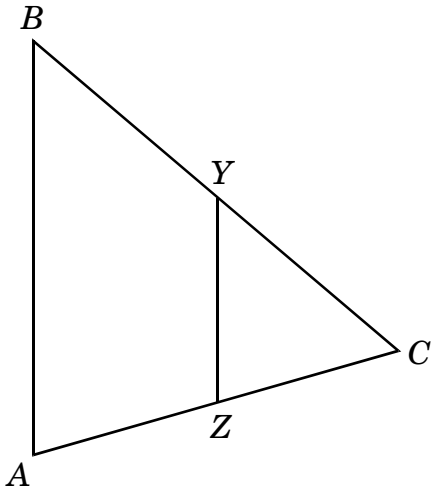
A 160

B 125

C 120

D 115

49. In ΔABC, Z is the midpoint of $\overline{AC}$ and Y is the midpoint of $\overline{BC}$.



If $YZ = 21$ and $AB = (2x - 4)$, what is x?

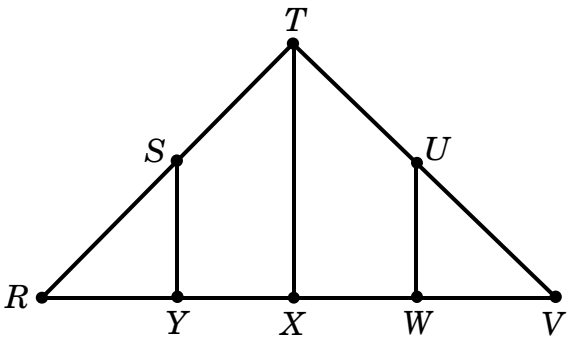
A 7.25

B 12.5

C 23

D 46

50. In the triangle, $\overline{UW}$ bisects $\overline{XV}$. $\overline{TX}$ and $\overline{UW}$ are perpendicular to $\overline{RV}$.



If $TX = 12$ ft and $XV = 10$ ft, ***about*** how long is $\overline{UV}$?

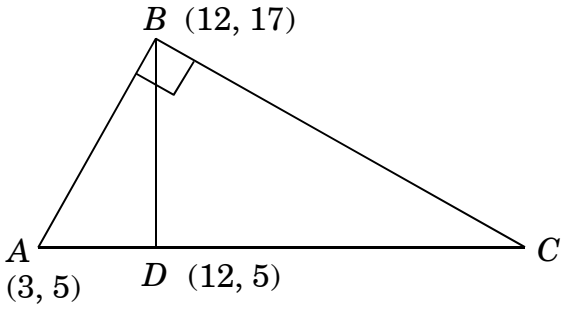
A 5 ft

B 6 ft

C 8 ft

D 10 ft

51. ΔABC is a right triangle with altitude $\overline{BD}$.



What are the coordinates of point C?

A $(9,5)$

B $(16,5)$

C $(27,5)$

D $(28,5)$

52. If a plane, 12 units from the center of a sphere, intersects the sphere in a circle with radius 9 units, what is the radius of the sphere?

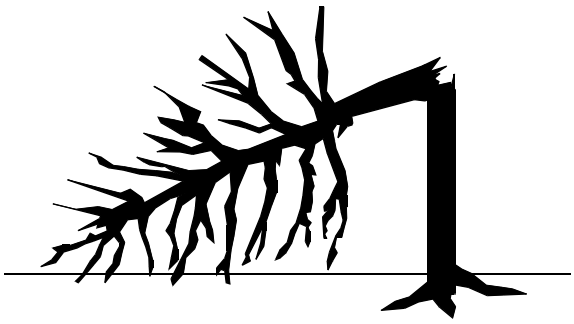
A 5 units

B 5.20 units

C 7.94 units

D 15 units

53. A dead tree was struck by lightning, causing it to fall over at a point 10 ft up from the base of the tree.



If the fallen treetop forms a 40° angle with the ground, ***about*** how tall was the tree originally?

A 13 ft

B 16 ft

C 23 ft

D 26 ft

54. A ladder is leaning against the side of a building. The ladder is 30 feet long, and the angle between the ladder and the building is 15°. About how far is the foot of the ladder from the building?

A 7.76 feet

B 8.04 feet

C 18.37 feet

D 28.98 feet

55. The center of a circle may be found by constructing perpendicular bisectors of chords. How many perpendicular bisectors are needed?

A one

B two

C three

D four

56. A broadcast tower is located at point $(^{-}1,3)$ on an *xy*-coordinate grid, where each unit is one mile. If its broadcast reaches only a 20-mile radius, what is the set of points where the broadcast is received by its listeners?

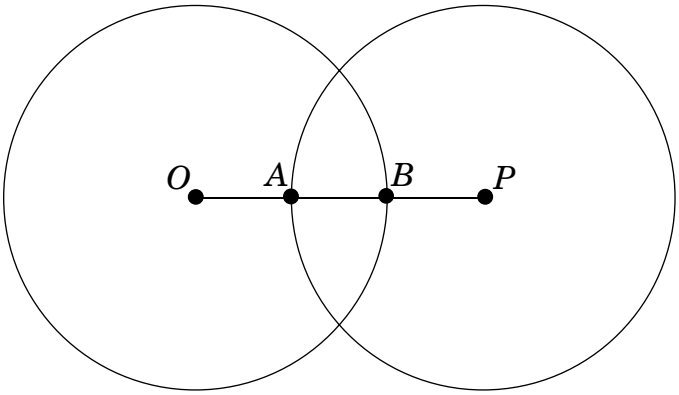
A $(x+1)^2 + (y-3)^2 \leq 400$

B $(x+1)^2 + (y-3)^2 \geq 400$

C $(x-1)^2 + (y-3)^2 \geq 400$

D $(x-1)^2 + (y+3)^2 \leq 400$

57. In order to create a pattern for a blanket, Ming needs to use two congruent circles as shown.



If $OP = 31$ inches and $AB = 5$ inches, what is the radius of one of the circles?

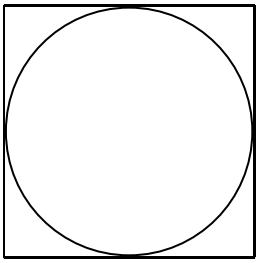
A 13 in.

B 15.5 in.

C 16.5 in.

D 18 in.

58. A gardener wants to enclose a circular garden with a square fence, as shown below.



If the circumference of the circular garden is about 48 feet, which of the following is the ***best*** estimate for the length of fencing needed?

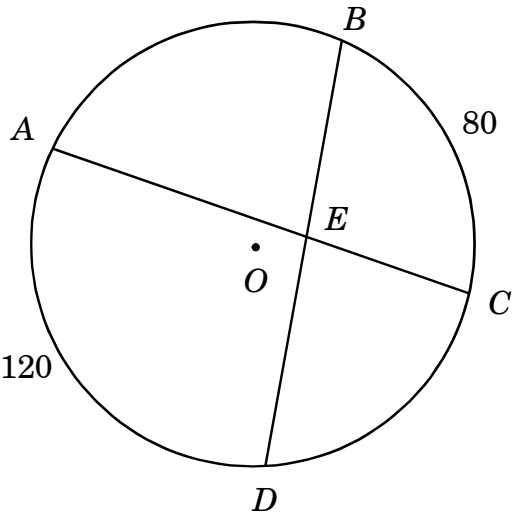
A 31 ft

B 61 ft

C 122 ft

D 244 ft

59. In circle O, $m\overset{\frown}{AD} = 120$ and $m\overset{\frown}{BC} = 80$.



What is $m\angle BEC$?

A 30

B 80

C 100

D 160

60. Which of the following statements is true?

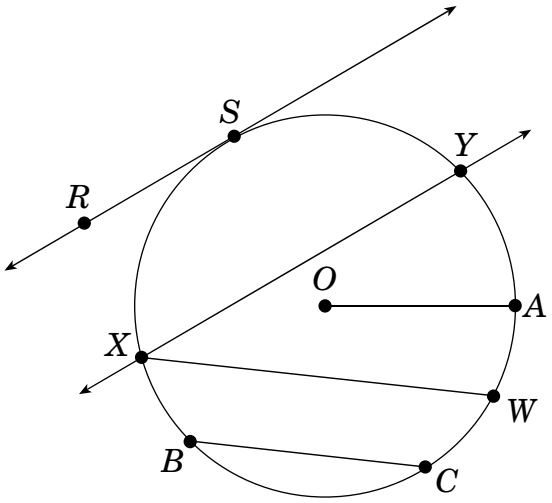
A A chord is contained in a tangent.

B A chord is contained in a radius.

C A chord is contained in a secant.

D A chord is contained in an arc.

61. In circle O, which term correctly identifies $\overleftrightarrow{XY}$?



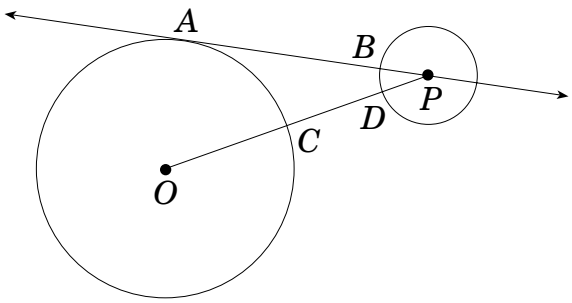
A chord

B radius

C secant

D tangent

62. $\overleftrightarrow{AP}$ is tangent to circle O at A, circle O has a radius of 6 ft, circle P has a radius of 2 ft, and $AB = 6$ ft.



What is CD?

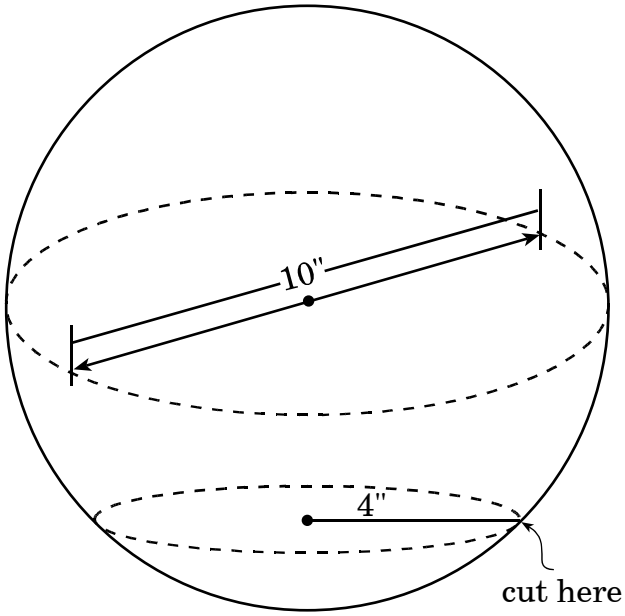
A 1 ft

B 2 ft

C 3 ft

D 4 ft

63. A spherical foam ball, 10 inches in diameter, is used to make a tabletop decoration for a party. To make the decoration sit flat on the table, a horizontal slice is removed from the bottom of the ball, as shown below.



If the radius of the flat surface formed by the cut is 4 inches, what is the height of the decoration?

A 10 in.

B 8 in.

C 6 in.

D 4 in.

64. The equation of a sphere is $(x-2)^2+(y-3)^2+(z-4)^2=49$. What are the center and the radius, r, of the sphere?

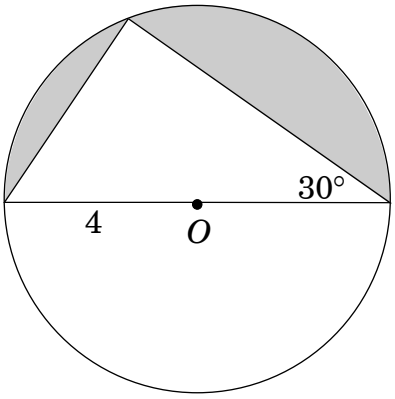
A $(^-2, ^-3, ^-4); r = 49$

B $(2, 3, 4); r = 7$

C $(2, 3, 4); r = 49$

D $(^-2, ^-3, ^-4); r = 7$

65. What is the ***approximate*** area of the shaded region?



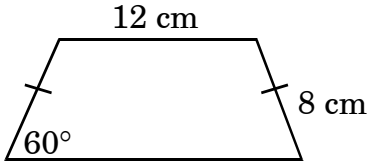
A 8.57 square units

B 8.70 square units

C 9.13 square units

D 11.28 square units

66. What is the area of the trapezoid?



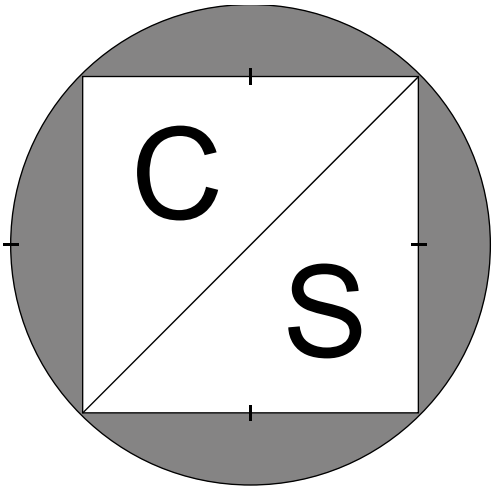
A 83.1 cm^2

B 110.9 cm^2

C 128.0 cm^2

D 192.0 cm^2

67. Marianna designed the logo shown for a computer software company.



If the diameter of the circle is 8 cm, what is the ***approximate*** area of the shaded part of the logo?

A 64 cm^2

B 50.24 cm^2

C 32 cm^2

D 18.27 cm^2

68. An inflated round balloon with radius $r = 50$ centimeters holds approximately 523,600 cubic centimeters of air. When the balloon is contracted such that the radius is $\frac{2}{3}$ the original size, what is the ***approximate*** volume of the partially deflated balloon?

A 1.94×10^4 cm^3

B 1.55×10^5 cm^3

C 1.75×10^5 cm^3

D 3.49×10^5 cm^3

End of Goal 2 Sample Items

Answers to EOC Geometry Sample Items

Goal 2

1. **Objective 2.01**
   Identify, name, and draw sets of points, such as line, ray, segment, and plane.
   Thinking Skill: Analyzing **Correct Answer:** A

2. **Objective 2.01**
   Identify, name, and draw sets of points, such as line, ray, segment, and plane.
   Thinking Skill: Analyzing **Correct Answer:** D

3. **Objective 2.01**
   Identify, name, and draw sets of points, such as line, ray, segment, and plane.
   Thinking Skill: Analyzing **Correct Answer:** C

4. **Objective 2.01**
   Identify, name, and draw sets of points, such as line, ray, segment, and plane.
   Thinking Skill: Analyzing **Correct Answer:** B

5. **Objective 2.02**
   Identify the coordinates of a point in a plane or in space.
   Thinking Skill: Analyzing **Correct Answer:** A

6. **Objective 2.02**
   Identify the coordinates of a point in a plane or in space.
   Thinking Skill: Analyzing **Correct Answer:** D

7. **Objective 2.02**
   Identify the coordinates of a point in a plane or in space.
   Thinking Skill: Integrating **Correct Answer:** B

8. **Objective 2.03**
   Find the length and the midpoint of a segment in two or three dimensions to solve problems.
   Thinking Skill: Applying **Correct Answer:** C

9. **Objective 2.03**
   Find the length and the midpoint of a segment in two or three dimensions to solve problems.
   Thinking Skill: Integrating **Correct Answer:** B

10. **Objective 2.03**
    Find the length and the midpoint of a segment in two or three dimensions to solve problems.
    Thinking Skill: Applying **Correct Answer:** A

Goal 2

11. Objective 2.03
Find the length and the midpoint of a segment in two or three dimensions to solve problems.
Thinking Skill: Applying **Correct Answer:** D

12. Objective 2.05
Use the structure (definitions, postulates, theorems, properties of equality and inequality) of deductive reasoning to solve problems.
Thinking Skill: Integrating **Correct Answer:** A

13. Objective 2.05
Use the structure (definitions, postulates, theorems, properties of equality and inequality) of deductive reasoning to solve problems.
Thinking Skill: Integrating **Correct Answer:** B

14. Objective 2.05
Use the structure (definitions, postulates, theorems, properties of equality and inequality) of deductive reasoning to solve problems.
Thinking Skill: Applying **Correct Answer:** D

15. Objective 2.05
Use the structure (definitions, postulates, theorems, properties of equality and inequality) of deductive reasoning to solve problems.
Thinking Skill: Analyzing **Correct Answer:** B

16. Objective 2.06
Write and interpret conditional statements including the converse, inverse, and contrapositive.
Thinking Skill: Applying **Correct Answer:** B

17. Objective 2.06
Write and interpret conditional statements including the converse, inverse, and contrapositive.
Thinking Skill: Analyzing **Correct Answer:** A

18. Objective 2.06
Write and interpret conditional statements including the converse, inverse, and contrapositive.
Thinking Skill: Analyzing **Correct Answer:** A

19. Objective 2.06
Write and interpret conditional statements including the converse, inverse, and contrapositive.
Thinking Skill: Analyzing **Correct Answer:** A

Goal 2

20. Objective 2.07
Write direct (two-column, paragraph, or flow) and indirect proofs.
Thinking Skill: Analyzing **Correct Answer:** D

21. Objective 2.07
Write direct (two-column, paragraph, or flow) and indirect proofs.
Thinking Skill: Analyzing **Correct Answer:** A

22. Objective 2.07
Write direct (two-column, paragraph, or flow) and indirect proofs.
Thinking Skill: Analyzing **Correct Answer:** B

23. Objective 2.07
Write direct (two-column, paragraph, or flow) and indirect proofs.
Thinking Skill: Analyzing **Correct Answer:** A

24. Objective 2.08
Use properties, definitions, and theorems of angles and lines to solve problems and write proofs, related to: a) Adjacent, vertical, linear pair, complementary and supplementary angles. b) The segment addition postulate and the angle addition postulate. c) Angle bisectors, segment bisectors, and perpendicular bisectors. d) Special pairs of angles formed by parallel lines and a transversal. e) Skew, parallel, and perpendicular lines.
Thinking Skill: Analyzing **Correct Answer:** D

25. Objective 2.08
Use properties, definitions, and theorems of angles and lines to solve problems and write proofs, related to: a) Adjacent, vertical, linear pair, complementary and supplementary angles. b) The segment addition postulate and the angle addition postulate. c) Angle bisectors, segment bisectors, and perpendicular bisectors. d) Special pairs of angles formed by parallel lines and a transversal. e) Skew, parallel, and perpendicular lines.
Thinking Skill: Analyzing **Correct Answer:** B

26. Objective 2.08
Use properties, definitions, and theorems of angles and lines to solve problems and write proofs, related to: a) Adjacent, vertical, linear pair, complementary and supplementary angles. b) The segment addition postulate and the angle addition postulate. c) Angle bisectors, segment bisectors, and perpendicular bisectors. d) Special pairs of angles formed by parallel lines and a transversal. e) Skew, parallel, and perpendicular lines.
Thinking Skill: Applying **Correct Answer:** C

Goal 2

27. Objective 2.08

Use properties, definitions, and theorems of angles and lines to solve problems and write proofs, related to: a) Adjacent, vertical, linear pair, complementary and supplementary angles. b) The segment addition postulate and the angle addition postulate. c) Angle bisectors, segment bisectors, and perpendicular bisectors. d) Special pairs of angles formed by parallel lines and a transversal. e) Skew, parallel, and perpendicular lines.

Thinking Skill: Analyzing **Correct Answer:** A

28. Objective 2.09

Use properties, definitions, and theorems of polygons to solve problems related to: a) Modeling and describing polygons (convex, concave, regular, nonregular). b) The interior and exterior angles of a convex polygon. c) Congruent and similar polygons.

Thinking Skill: Analyzing **Correct Answer:** D

29. Objective 2.09

Use properties, definitions, and theorems of polygons to solve problems related to: a) Modeling and describing polygons (convex, concave, regular, nonregular). b) The interior and exterior angles of a convex polygon. c) Congruent and similar polygons.

Thinking Skill: Applying **Correct Answer:** C

30. Objective 2.09

Use properties, definitions, and theorems of polygons to solve problems related to: a) Modeling and describing polygons (convex, concave, regular, nonregular). b) The interior and exterior angles of a convex polygon. c) Congruent and similar polygons.

Thinking Skill: Analyzing **Correct Answer:** C

31. Objective 2.09

Use properties, definitions, and theorems of polygons to solve problems related to: a) Modeling and describing polygons (convex, concave, regular, nonregular). b) The interior and exterior angles of a convex polygon. c) Congruent and similar polygons.

Thinking Skill: Integrating **Correct Answer:** D

32. Objective 2.10

Recognize, identify, and model regular and non-regular polyhedra.

Thinking Skill: Analyzing **Correct Answer:** A

33. Objective 2.10

Recognize, identify, and model regular and non-regular polyhedra.

Thinking Skill: Applying **Correct Answer:** C

Goal 2

34. Objective 2.10
Recognize, identify, and model regular and non-regular polyhedra.
Thinking Skill: Knowledge **Correct Answer:** B

35. Objective 2.10
Recognize, identify, and model regular and non-regular polyhedra.
Thinking Skill: Analyzing **Correct Answer:** D

36. Objective 2.11
Use coordinate geometry to confirm properties of polygons.
Thinking Skill: Analyzing **Correct Answer:** D

37. Objective 2.11
Use coordinate geometry to confirm properties of polygons.
Thinking Skill: Analyzing **Correct Answer:** C

38. Objective 2.11
Use coordinate geometry to confirm properties of polygons.
Thinking Skill: Applying **Correct Answer:** A

39. Objective 2.11
Use coordinate geometry to confirm properties of polygons.
Thinking Skill: Applying **Correct Answer:** C

40. Objective 2.12
Develop and use properties of quadrilaterals (parallelograms, rectangles, rhombi, squares, trapezoids, kites) to solve problems and write proofs.
Thinking Skill: Applying **Correct Answer:** C

41. Objective 2.12
Develop and use properties of quadrilaterals (parallelograms, rectangles, rhombi, squares, trapezoids, kites) to solve problems and write proofs.
Thinking Skill: Analyzing **Correct Answer:** A

42. Objective 2.12
Develop and use properties of quadrilaterals (parallelograms, rectangles, rhombi, squares, trapezoids, kites) to solve problems and write proofs.
Thinking Skill: Applying **Correct Answer:** D

43. Objective 2.12
Develop and use properties of quadrilaterals (parallelograms, rectangles, rhombi, squares, trapezoids, kites) to solve problems and write proofs.
Thinking Skill: Applying **Correct Answer:** A

44. Objective 2.13
Develop and use properties of triangles to solve problems and write proofs related to: a) The relationships of the lengths of the sides and measures of the angles. b) Similar triangles and the relationship of their corresponding parts. c) Congruent triangles and their corresponding parts. d) Isosceles and equilateral triangles. e) Altitudes, perpendicular bisectors, angle bisectors, and medians.
Thinking Skill: Applying **Correct Answer:** C

45. Objective 2.13
Develop and use properties of triangles to solve problems and write proofs related to: a) The relationships of the lengths of the sides and measures of the angles. b) Similar triangles and the relationship of their corresponding parts. c) Congruent triangles and their corresponding parts. d) Isosceles and equilateral triangles. e) Altitudes, perpendicular bisectors, angle bisectors, and medians.
Thinking Skill: Analyzing **Correct Answer:** A

46. Objective 2.13
Develop and use properties of triangles to solve problems and write proofs related to: a) The relationships of the lengths of the sides and measures of the angles. b) Similar triangles and the relationship of their corresponding parts. c) Congruent triangles and their corresponding parts. d) Isosceles and equilateral triangles. e) Altitudes, perpendicular bisectors, angle bisectors, and medians.
Thinking Skill: Applying **Correct Answer:** B

47. Objective 2.13
Develop and use properties of triangles to solve problems and write proofs related to: a) The relationships of the lengths of the sides and measures of the angles. b) Similar triangles and the relationship of their corresponding parts. c) Congruent triangles and their corresponding parts. d) Isosceles and equilateral triangles. e) Altitudes, perpendicular bisectors, angle bisectors, and medians.
Thinking Skill: Applying **Correct Answer:** A

48. Objective 2.14
Investigate and use properties of triangles to solve problems and write proofs related to: a) The interior and exterior angles of a triangle. b) The segment joining the midpoints of two sides of a triangle. c) Segments divided proportionally.
Thinking Skill: Integrating **Correct Answer:** B

49. Objective 2.14
Investigate and use properties of triangles to solve problems and write proofs related to: a) The interior and exterior angles of a triangle. b) The segment joining the midpoints of two sides of a triangle. c) Segments divided proportionally.
Thinking Skill: Applying **Correct Answer:** C

Goal 2

50. Objective 2.14
Investigate and use properties of triangles to solve problems and write proofs related to: a) The interior and exterior angles of a triangle. b) The segment joining the midpoints of two sides of a triangle. c) Segments divided proportionally.
Thinking Skill: Integrating **Correct Answer:** C

51. Objective 2.15
Apply properties of right triangles to solve problems using: a) The geometric mean. b) The Pythagorean Theorem and its converse. c) The relationships in special right triangles. d) The definitions of sine, cosine, and tangent.
Thinking Skill: Applying **Correct Answer:** D

52. Objective 2.15
Apply properties of right triangles to solve problems using: a) The geometric mean. b) The Pythagorean Theorem and its converse. c) The relationships in special right triangles. d) The definitions of sine, cosine, and tangent.
Thinking Skill: Applying **Correct Answer:** D

53. Objective 2.15
Apply properties of right triangles to solve problems using: a) The geometric mean. b) The Pythagorean Theorem and its converse. c) The relationships in special right triangles. d) The definitions of sine, cosine, and tangent.
Thinking Skill: Applying **Correct Answer:** D

54. Objective 2.15
Apply properties of right triangles to solve problems using: a) The geometric mean. b) The Pythagorean Theorem and its converse. c) The relationships in special right triangles. d) The definitions of sine, cosine, and tangent.
Thinking Skill: Applying **Correct Answer:** A

55. Objective 2.16
Develop and use properties of circles to solve problems and write proofs related to: a) The definition of a circle and sets of points related to the circle. b) The equation of a circle, its center and radius length. c) Congruent and concentric circles. d) Circles and their common tangents. e) Circumscribed and inscribed figures.
Thinking Skill: Analyzing **Correct Answer:** B

56. Objective 2.16
Develop and use properties of circles to solve problems and write proofs related to: a) The definition of a circle and sets of points related to the circle. b) The equation of a circle, its center and radius length. c) Congruent and concentric circles. d) Circles and their common tangents. e) Circumscribed and inscribed figures.
Thinking Skill: Applying **Correct Answer:** A

Goal 2

57. Objective 2.16
Develop and use properties of circles to solve problems and write proofs related to: a) The definition of a circle and sets of points related to the circle. b) The equation of a circle, its center and radius length. c) Congruent and concentric circles. d) Circles and their common tangents. e) Circumscribed and inscribed figures.
Thinking Skill: Applying **Correct Answer:** D

58. Objective 2.16
Develop and use properties of circles to solve problems and write proofs related to: a) The definition of a circle and sets of points related to the circle. b) The equation of a circle, its center and radius length. c) Congruent and concentric circles. d) Circles and their common tangents. e) Circumscribed and inscribed figures.
Thinking Skill: Applying **Correct Answer:** B

59. Objective 2.17
Apply properties of circles to solve problems involving: a) Arcs and angles of circles. b) The chords, tangents, secants, and radii of a circle.
Thinking Skill: Applying **Correct Answer:** C

60. Objective 2.17
Apply properties of circles to solve problems involving: a) Arcs and angles of circles. b) The chords, tangents, secants, and radii of a circle.
Thinking Skill: Knowledge **Correct Answer:** C

61. Objective 2.17
Apply properties of circles to solve problems involving: a) Arcs and angles of circles. b) The chords, tangents, secants, and radii of a circle.
Thinking Skill: Knowledge **Correct Answer:** C

62. Objective 2.17
Apply properties of circles to solve problems involving: a) Arcs and angles of circles. b) The chords, tangents, secants, and radii of a circle.
Thinking Skill: Applying **Correct Answer:** B

63. Objective 2.18
Use spheres to solve problems related to the definition of a sphere and sets of points related to the sphere.
Thinking Skill: Integrating **Correct Answer:** B

64. Objective 2.18
Use spheres to solve problems related to the definition of a sphere and sets of points related to the sphere.
Thinking Skill: Analyzing **Correct Answer:** B

65. Objective 2.19

Use formulas to solve problems related to: a) The perimeter of a geometric figure and circumference of a circle. b) The area of a triangle, parallelogram, rhombus, trapezoid, square, rectangle, regular polygons, and circles. c) Arc lengths and the area of sectors of a circle. d) The ratio of the perimeters, areas, and volumes of similar geometric figures. e) The lateral area, surface area, and volume of a right prism, pyramid, right circular cylinder, cone, and sphere.

Thinking Skill: Applying **Correct Answer:** D

66. Objective 2.19

Use formulas to solve problems related to: a) The perimeter of a geometric figure and circumference of a circle. b) The area of a triangle, parallelogram, rhombus, trapezoid, square, rectangle, regular polygons, and circles. c) Arc lengths and the area of sectors of a circle. d) The ratio of the perimeters, areas, and volumes of similar geometric figures. e) The lateral area, surface area, and volume of a right prism, pyramid, right circular cylinder, cone, and sphere.

Thinking Skill: Applying **Correct Answer:** B

67. Objective 2.19

Use formulas to solve problems related to: a) The perimeter of a geometric figure and circumference of a circle. b) The area of a triangle, parallelogram, rhombus, trapezoid, square, rectangle, regular polygons, and circles. c) Arc lengths and the area of sectors of a circle. d) The ratio of the perimeters, areas, and volumes of similar geometric figures. e) The lateral area, surface area, and volume of a right prism, pyramid, right circular cylinder, cone, and sphere.

Thinking Skill: Applying **Correct Answer:** D

68. Objective 2.19

Use formulas to solve problems related to: a) The perimeter of a geometric figure and circumference of a circle. b) The area of a triangle, parallelogram, rhombus, trapezoid, square, rectangle, regular polygons, and circles. c) Arc lengths and the area of sectors of a circle. d) The ratio of the perimeters, areas, and volumes of similar geometric figures. e) The lateral area, surface area, and volume of a right prism, pyramid, right circular cylinder, cone, and sphere.

Thinking Skill: Applying **Correct Answer:** B

