

Your exam has approximately 40 questions. If you google the standard, look for the Shmoop.com entry. It will have additional practice problems (sample assignments)

6.CO.1: Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc.

- 1.
- 2.

Which term used in geometry is a defined term?

- A. line
- B. point
- C. plane
- D. line segment

Martessa is helping Elwood with a geometry question. The question asked for the definition of the term *plane*. Martessa told Elwood this was a difficult question. Why did she think this question is difficult?

- A. *Plane* is an undefined term, so it does not have a definition.
- B. There are many definitions of the term *plane*, and it is difficult to choose the best one.
- C. The definition of the term *plane* requires spatial reasoning, which is sometimes difficult to visualize.
- D. It is difficult to define the term *plane* because the definition requires understanding other complex terms.

- 3.
- 4.

What is the definition of perpendicular lines?

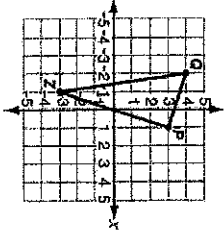
- A. lines that intersect at right angles
- B. lines that intersect at straight angles
- C. lines in the same plane that do not intersect
- D. lines in different planes that do not intersect

Mary Ann drew two lines on the chalkboard. Her two lines lie in the same plane but share no common points. Which could be a description of Mary Ann's drawing?

- A. a set of skew lines
- B. a set of parallel lines
- C. a set of adjacent rays
- D. a set of collinear points

6.CO.2: Represent transformations in the plane using, e.g., transparencies and geometry software; describe transformations as functions that take points in the plane as inputs and give other points as outputs. Compare transformations that preserve distance and angle to those that do not (e.g., translation versus horizontal stretch).

- 5.



If $\triangle PQR$ is translated $\langle -2, -5 \rangle$, what are the new coordinates of Z ?

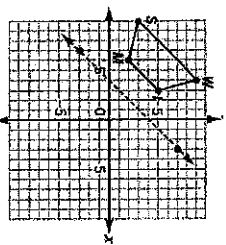
- A. $(-5, -1)$
- B. $(-3, 2)$
- C. $(2, -1)$
- D. $(4, -5)$

- 6.

Akiah is using a coordinate graph to show the placement of vegetables in her garden. She places green peppers on the coordinate $(5, -6)$. If she decides to move the peppers by rotating them 180° clockwise about the origin, which coordinate will represent the new placement of the peppers?

- A. $(-5, -6)$
- B. $(-5, 6)$
- C. $(5, -6)$
- D. $(5, 6)$

- 7.

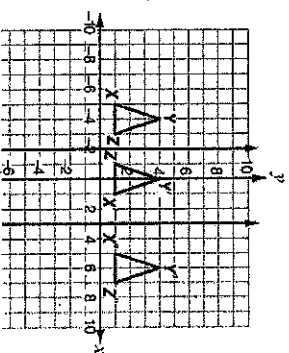


If you reflected the trapezoid over the dashed line, what would be the coordinates of trapezoid $S'W'R'M'$?

- A. $S'(-1, -6)$, $W'(5, 0)$, $R'(1, 1)$, $M'(-2, -2)$
- B. $S'(-4, -3)$, $W'(2, 3)$, $R'(3, -2)$, $M'(0, -5)$
- C. $S'(3, -10)$, $W'(9, -4)$, $R'(5, -3)$, $M'(2, -6)$
- D. $S'(3, 5)$, $W'(-4, 9)$, $R'(-3, 5)$, $M'(-6, 2)$

- 8.

Triangle $X'Y'Z'$ has been reflected over the line $x = -2$, resulting in triangle $X''Y''Z''$. Then that triangle has been reflected over the line $x = 3$, resulting in triangle $X'''Y'''Z'''$. The result is a translation.



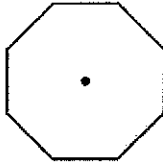
How does the distance of the slide compare with the distance between the two parallel lines?

- A. The distance of the slide is one-half the distance between the parallel lines.
- B. The distance of the slide is equal to the distance between the parallel lines.
- C. The distance of the slide is 2 times the distance between the parallel lines.
- D. The distance of the slide is 3 times the distance between the parallel lines.

6.CO.3 Given a rectangle, parallelogram, trapezoid, or regular polygon, describe the rotations and reflections that carry it onto itself.

9.

The polygon below has a center point.

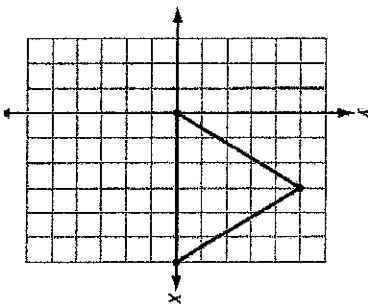


Which list of rotations about the center point will result in the figure being carried onto itself?

- A. 30° , 45° , and 60°
- B. 45° , 60° , and 90°
- C. 60° , 90° , and 135°
- D. 45° , 90° , and 135°

10.

Which transformation of the triangle will cause the resulting triangle to be located in exactly the same position?



- A. clockwise rotation about the origin of 90° , then reflection over the x-axis
- B. reflection over the x-axis, then clockwise rotation about the origin of 180°
- C. axis, then clockwise rotation about the origin of 90°
- D. rotation about the origin of 180° , reflection over the y-axis, then reflection over the x-axis

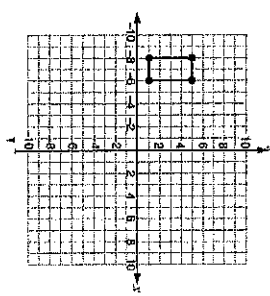
12.

Given a regular octagon, how many lines exist such that a reflection across the line would take the octagon onto itself?

- A. 2
- B. 4
- C. 8
- D. ∞

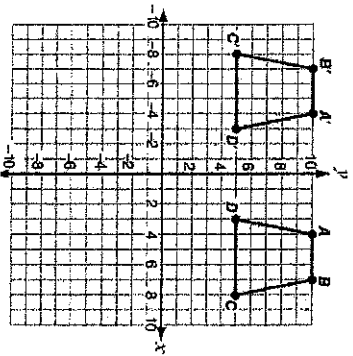
13.

Which transformation, when performed individually, would transform the rectangle below onto itself?



- I. A clockwise rotation 180° about the origin
 - II. A clockwise rotation 180° about the point $(-7, 3)$
 - III. A reflection across the x-axis, followed by a translation up 6 units
 - IV. A reflection across the y-axis, followed by a translation left 12 units
- A. I and II only
 - B. II and III only
 - C. III and IV only
 - D. II, III, and IV only

11. Which describes the relationship between the two trapezoids?

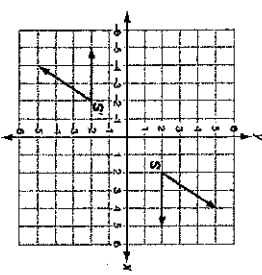


- A. $A'B'C'D'$ is the result of reflecting $A'B'CD$.
- B. $A'B'C'D'$ is the result of rotating $A'B'CD$ 180° clockwise.
- C. $A'B'C'D'$ is the result of translating $A'B'CD$ to the right.
- D. $A'B'C'D'$ is the result of rotating $A'B'CD$ 90° counterclockwise.

G.CO.4 Develop definitions of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments.

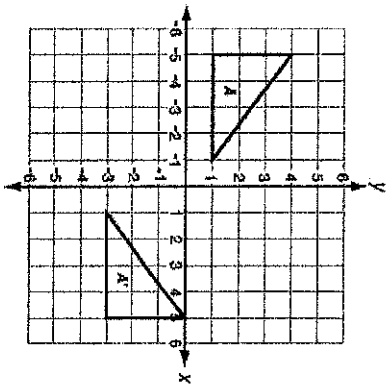
14.

Which transformation was performed on $\angle S$ to produce $\angle S'$?



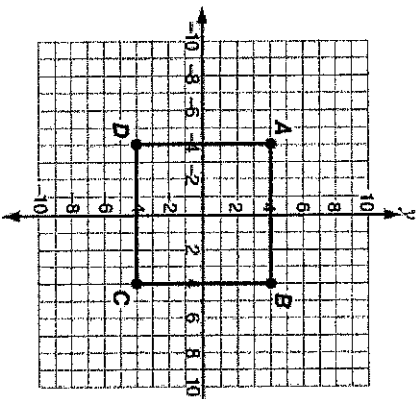
- A. $\angle S$ was reflected across the x-axis and then reflected across the y-axis because the angles are the same measure but face opposite directions.
- B. $\angle S$ was rotated counterclockwise 90° and then translated left 4 units because the angles are the same measure but face opposite directions.
- C. $\angle S$ was translated left 7 units and then reflected across the x-axis because the angles are the same measure and face the same direction.
- D. $\angle S$ was rotated 180° and then reflected across the y-axis because the angles are the same measure and face the same direction.

15. Look at figure A and its image, A' .



- Which best describes the series of transformations that were performed on figure A ?
- a rotation of 180° and a translation of 4 units down
 - a reflection across the y -axis and a translation of 4 units down
 - a reflection across the y -axis and a reflection across the x -axis
 - a rotation of 90° counterclockwise and a translation of 6 units to the right

17. Rectangle $ABCD$, shown below, is translated up 3 units and right 2 units to produce rectangle $A'B'C'D'$.



- Which statement is true?
- $\overline{AB} \parallel \overline{A'B'}$ and $\overline{BC} \parallel \overline{B'C'}$
 - $\overline{AB} \perp \overline{A'B'}$ and $\overline{BC} \perp \overline{B'C'}$
 - $2AB = A'B'$ and $3BC = B'C'$
 - $AB + 2 = A'B'$ and $BC + 3 = B'C'$

16. Rectangle $QRST$ has vertices at the coordinates $(1, 3)$, $(4, 3)$, $(4, 1)$, and $(1, 1)$. Rectangle $Q'R'S'T'$ has vertices at the coordinates $(1, -5)$, $(4, -5)$, $(4, -7)$, and $(1, -7)$. Which transformation did the rectangle undergo?

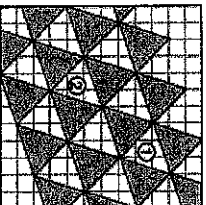
- rotation, since the new figure is upside down and in a new location
- translation, since the new figure is right-side up and in a new location
- dilation of $-\frac{5}{3}$, since the new coordinates are smaller and the figure is right-side up
- reflection, since the coordinates are across the x -axis from each other and the figure is upside down

G.CO.5: Given a geometric figure and a rotation, reflection, or translation, draw the transformed figure using, e.g., graph paper, tracing paper, or geometry software. Specify a sequence of transformations that will carry a given figure onto another.

G.CO.6: Use geometric descriptions of rigid motions to transform figures and to predict the effect of a given rigid motion on a given figure; given two figures, use the definition of congruence in terms of rigid motions to decide if they are congruent.

- 18.

Aidan created this design for a wall mural.

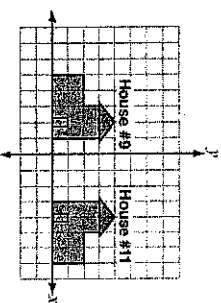


Which describes the translation from figure 1 to figure 2?

- up 3 units and right 1 unit
- down 1 unit and left 3 units
- up 4 units and right 4 units
- down 4 units and left 4 units

- 19.

A city planning commission is using coordinate grids to lay out properties on a new street. One of the grids is shown below.



- If the location of house #11 is a reflection of house #9, which represents the line of reflection used?
- $x = -1$
 - $y = -1$
 - $x = 1$
 - $y = 1$

20.

The point $(2, 3)$ is reflected over the x -axis and then translated 4 units to the left and 2 units up. What are the new coordinates of the point?

- A. $(-2, -1)$
- B. $(2, 1)$
- C. $(6, -5)$
- D. $(-6, 5)$

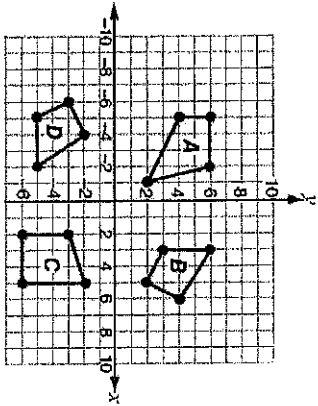
22.

A triangle was rotated 90 degrees counterclockwise and then translated 2 down and 4 left. The final coordinates of the triangle are: $(1, -3)$, $(-2, 0)$, and $(3, 2)$. What were the original coordinates?

- A. $(1, 1)$ $(4, 4)$ $(6, -1)$
- B. $(0, 2)$ $(2, -3)$ $(-3, -1)$
- C. $(-1, 3)$ $(2, 0)$ $(-3, -2)$
- D. $(3, 7)$ $(8, -2)$ $(6, 4)$

21.

Quadrilaterals A, B, C, and D are shown on the coordinate plane below.

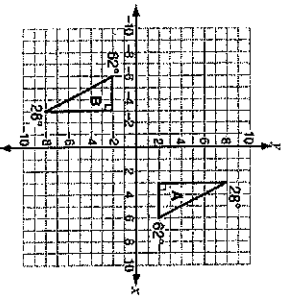


Which quadrilaterals are congruent, and why?

- A. A and C, because they could be rotated and translated to be onto each other.
- B. A and C, because they could be rotated, translated, and dilated to be onto each other.
- C. B and D, because they could be rotated and translated to be onto each other.
- D. B and D, because they could be rotated, translated, and dilated to be onto each other.

G.CO.7 Use the definitions of congruence in terms of rigid motions to show that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent.

Which rigid motions could be used to show that triangle B is congruent to triangle A?



23.

- A. Triangle B is translated 4 units up and then rotated 180° clockwise about the origin.
- B. Triangle B is dilated by $\frac{1}{2}$ and then rotated 90° counterclockwise about the origin.
- C. Triangle B is reflected over the x -axis and then translated 3 units to the right.
- D. Triangle B is reflected over the y -axis and reflected over the x -axis.

24.

If $\triangle APT$ is congruent to $\triangle PQC$, which side would be corresponding to \overline{TC} ?

- A. \overline{AT}
- B. \overline{PD}
- C. \overline{TD}
- D. \overline{CD}

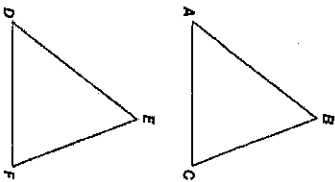
25.

How could a student determine that a triangle and its transformed image are congruent?

- A. They are congruent if and only if the triangles are right triangles.
- B. They are congruent if and only if the transformed figure was not rotated.
- C. They are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent.
- D. They are congruent if and only if corresponding pairs of sides are similar and corresponding pairs of angles are similar.

26.

Emily wants to know if these two triangles are congruent.

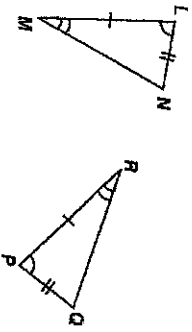


- Which conditions are enough to prove these two triangles are congruent?
- A. Side AB is the same length as side DF , and angle A is the same measure as angle D .
 - B. Side AB is the same length as side DE , and angle C is the same measure as angle F .
 - C. Side AB is the same length as side DF , side BC is the same length as side EF , and side AC is the same length as side DF .
 - D. Angle A is the same measure as angle D , angle B is the same measure as angle F , and angle C is the same measure as angle F .

G.CO.8: Explain how the criteria for triangle congruence (ASA, SAS, and SSS) follow the definition of congruence in terms of rigid motions.

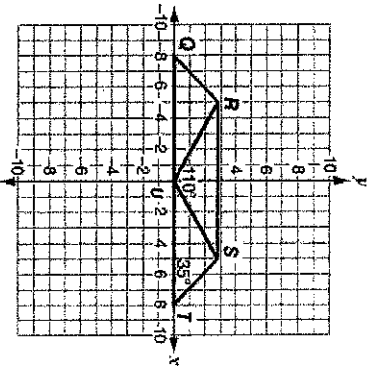
27.

Triangle PRQ is rotated, reflected, and translated to yield triangle LNM .



- Which statement proves that the two triangles are congruent?
- A. PQ is taken to LN , and PR is taken to LM .
 - B. LP is taken to LN , and LM is taken to LN .
 - C. PQ is taken to LN , PR is taken to LM , and LP is taken to LN .
 - D. PQ is taken to LN , PR is taken to LM , and LR is taken to LM .

28.

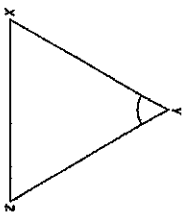


Which set of congruence statements explains why the triangles are congruent?

- A. $\overline{QR} = \overline{SU}$ and $\overline{RU} = \overline{SV}$; $\angle Q = \angle TUS$; SAS
- B. $\angle Q = \angle T$ and $\angle QUR = \angle TUS$; $\overline{QU} = \overline{TU}$; ASA
- C. $\overline{QR} = \overline{US}$; $\overline{RU} = \overline{SV}$; $\overline{QU} = \overline{TU}$; SSS
- D. $\angle Q = \angle T$; $\angle QRU = \angle TSU$; $\angle QUR = \angle TSU$; AAA

29.

Jarvis is constructing a formal proof using this figure.

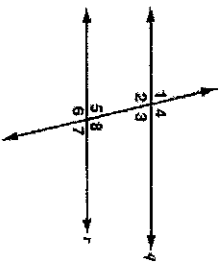


Jarvis wants to prove that the angle bisector of $\angle XYZ$ is the median of XZ . What must she prove to meet her conclusion?

- A. $\angle XYZ$ is a right angle.
- B. \overline{XY} is congruent to \overline{YZ} .
- C. $\angle XYZ$ is an obtuse angle.
- D. \overline{XY} is proportional to \overline{YZ} .

30.

Lines q and r are parallel. The $m\angle 5 = 77^\circ$, and the $m\angle 3 = 25 + x$.

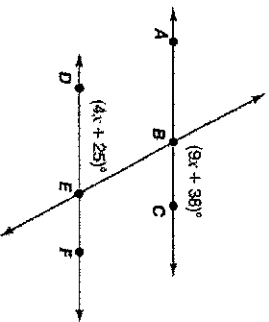


Which statement explains why you can use the equation $77 = 25 + x$ to solve for x ?

- A. Alternate exterior angles are congruent.
- B. Alternate interior angles are congruent.
- C. Complementary angles are congruent.
- D. Corresponding angles are congruent.

31.

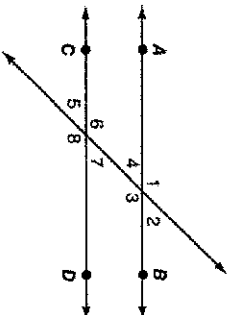
Given: $\overline{AC} \parallel \overline{DE}$ with transversal \overline{BE}



- What is the measure of $\angle ABF$?
- A. 61.0°
 - B. 96.8°
 - C. 119.0°
 - D. 168.2°

32.

Given: $\overline{AB} \parallel \overline{CD}$



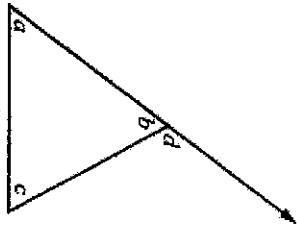
Which statement must be true?

- A. $\angle 1 \cong \angle 4$
- B. $\angle 3 \cong \angle 7$
- C. $\angle 2 \cong \angle 6$
- D. $\angle 8 \cong \angle 3$

G.CO.9: Prove theorems about lines and angles. Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints.

33.

In the figure below, the measure of $\angle b$ is x° .



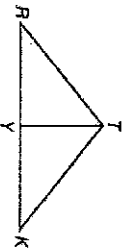
What is the measure of $\angle d$?

- A. $(90 - x)^\circ$
- B. $(x - 180)^\circ$
- C. $(x - 90)^\circ$
- D. $(180 - x)^\circ$

G.CO.10: Prove theorems about triangles. Theorems include: measures of interior angles of a triangle sum to 180° ; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point.

34.

In the diagram below, \overline{TY} bisects $\angle RTK$.



Which of these would be necessary to justify that $\triangle TTK$ is congruent to $\triangle TTK$ by the Angle-Side-Angle Congruency Theorem?

- A. $\overline{TY} \perp \overline{RK}$
- B. $\overline{RT} \cong \overline{TK}$
- C. $\angle R \cong \angle K$
- D. \overline{TY} bisects \overline{RK} .

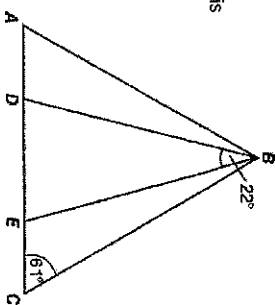
35.

When proving the exterior angle sum theorem, the first step is to show that an exterior angle of a polygon and an interior angle of a polygon equal 180 degrees. Which angle classification will help justify this step?

- A. vertical angles
- B. adjacent angles
- C. linear pair of angles
- D. complementary angles

36.

In the diagram below, \overline{AB} is congruent to \overline{BC} and \overline{DB} is congruent to \overline{BE} .



If $m\angle DBE = 22^\circ$ and $m\angle BCA = 64^\circ$, what is $m\angle AED$?

- A. 13°
- B. 18°
- C. 22°
- D. 40°

G.CO.11: Prove theorems about parallelograms. Theorems include: opposite sides are congruent, opposite angles are congruent, the diagonals of a parallelogram bisect each other, and conversely, rectangles are parallelograms with congruent diagonals.

37.

Tom drew a quadrilateral that had 2 sets of parallel sides, 2 sets of congruent sides, and 2 sets of opposite angles that were congruent but not right angles. Which of the following quadrilaterals did he draw?

- A. square
- B. rectangle
- C. trapezoid
- D. parallelogram

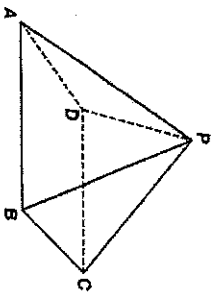
38.

Mrs. Douglas drew a quadrilateral on the chalkboard. She wanted her class to prove it was a rectangle. Which set of conditions must be met for the quadrilateral to be a rectangle?

- A. A pair of sides must be congruent and parallel. The diagonals must be congruent.
- B. The diagonals must be perpendicular to each other. A pair of sides must be congruent.
- C. A pair of sides must be parallel. The sum of any two consecutive angles must be equal to 180° .
- D. Each diagonal must bisect a pair of opposite angles. The opposite angles must add up to the sum of 180° .

G.CO.12: Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.). Copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line.

39. To help his friend put up a pup tent, Rob has drawn this diagram.

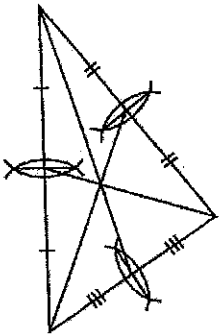


- A. construct an altitude from P to the center of the base plane
- B. construct a lateral edge from P to the midpoint of \overline{BC}
- C. construct a median from P to the center of the base plane
- D. construct a perpendicular bisector from P to the midpoint of \overline{BC}

Rob needs to add a line segment representing the tent pole. How should he complete this diagram?

40.

Greg used a compass and straight edge to draw the construction below.



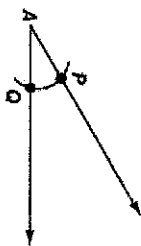
Which of these is shown by this construction?

- A. The medians of a triangle are concurrent.
- B. The altitudes of a triangle are concurrent.
- C. The angle bisectors of a triangle are concurrent.
- D. The perpendicular bisectors of a triangle are concurrent.

41.

Using a compass and straightedge, Rocco is constructing an angle congruent to a given angle.

Given: $\angle PMQ$



Which of the following should be Rocco's next step in his construction?

- A. use the compass to measure the distance from B to T
- B. use the compass to measure the distance from Q to T
- C. extend the line through B and T so that its length is equal to the length of the line through A and Q
- D. draw a line from B , with the same length as the line through A and P , which intersects the arc

G.CO.13: Construct an equilateral triangle, a square, and a regular hexagon inscribed in a circle.

G.SRT.1: Verify experimentally the properties of dilations given by a center and a scale factor:

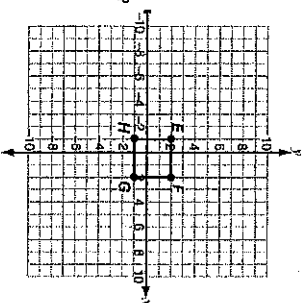
42.

Pentagon $PENVA$ undergoes a dilation of 2.5 to produce pentagon $P'E'N'V'A'$. Which ratio is equivalent to the ratio of the length of $\overline{EN'}$ to the length of \overline{EV} ?

- A. 1:5
- B. 2:5
- C. 5:1
- D. 5:2

43.

Square $EPGH$ is shown below. A dilation of 2 centered at $(2, 2)$ is performed. The resulting square is labeled $E'P'G'H'$.



What is the length of $\overline{P'G'}$?

- A. 2 units
- B. 3 units
- C. 5 units
- D. 6 units

44.

A movie was shot using film that is 35 mm wide. When the movie is projected onto a screen, the film's width is dilated by a factor of 350 to cover the screen's width exactly. How wide is the movie screen?

- A. 10 mm
- B. 385 mm
- C. 12,250 mm
- D. 35,000 mm

G.SRT.2: Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; explain using similarity transformations the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides.

G.SRT.3: Use the properties of similarity transformations to establish the AA criterion for two triangles to be similar.

45.

- A. $WX = W'X'$ and $XY = X'Y'$
- B. $WX = 3W'X'$ and $XY = 3X'Y'$
- C. $m\angle W = m\angle W'$ and $m\angle X = m\angle X'$
- D. $m\angle W' = 3m\angle W$ and $m\angle X' = 3m\angle X$

46. Triangle JAG is located in the first quadrant of a coordinate grid. The triangle undergoes a transformation so that the resulting triangle remains in the first quadrant. Some measurements of the triangles are shown below.

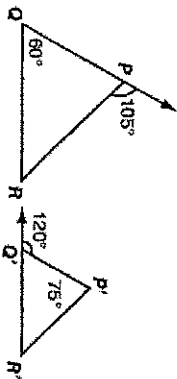
	JA	LA	LG
Before	27	72°	37°
After	18	72°	37°

What is true about the before and after triangles?

- A. They are right triangles.
- B. They are similar triangles.
- C. They are isosceles triangles.
- D. They are congruent triangles.

47.

$\triangle PQR$ has been dilated as shown.

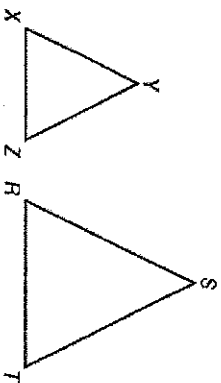


What is the measure of $\angle R$?

- A. 35°
- B. 45°
- C. 60°
- D. 75°

G.SRT.4: Prove theorems about triangles. Theorems include: a line parallel to one side of a triangle divides the other two proportionally, and conversely; the Pythagorean Theorem proved using triangle similarity.

48. Look at the triangles shown below.



Which proportion can be used to prove $\triangle XYZ$ and $\triangle RST$ similar?

- A. $\frac{XY}{YZ} = \frac{XZ}{RS}$
- B. $\frac{XY}{XZ} = \frac{RS}{ST}$
- C. $\frac{XY}{RS} = \frac{YZ}{ST} = \frac{XZ}{RT}$
- D. $\frac{XY}{RT} = \frac{XZ}{RS} = \frac{YZ}{ST}$

G.SRT.5: Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures.

G.C.3: Construct the inscribed and circumscribed circles of a triangle, and prove properties of angles for a quadrilateral inscribed in a circle.

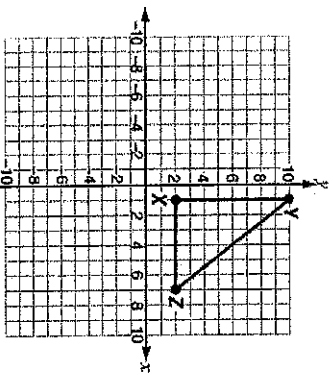
49.

What is the first step in constructing a circle inscribed in a triangle?

- A. the measurement of each side
- B. the midsegments of the triangle
- C. the angle bisectors of each angle
- D. the perpendicular bisectors of each side

51.

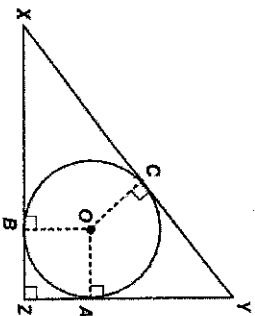
Which point is the center of the circle that is circumscribed about triangle XYZ shown below?



- A (4, 6)
- B (6, 4)
- C (3, 3)
- D (1, 2)

50.

The dotted lines in the figure below show how Jenny inscribed circle O in right triangle XYZ on a practice test.



What should Jenny have done differently to answer the question correctly?

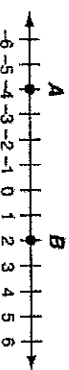
- A. Jenny should have used the altitudes of the triangle to find the incenter.
- B. Jenny should have constructed an inscribed circle.
- C. Jenny should have used the bisectors of angles X, Y, and Z to find the incenter.
- D. Jenny should have plotted points A, B, and C at the midpoints of the sides of the triangle.

G.GPE.5: Prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems (e.g., find the equation of a line parallel or perpendicular to a given line that passes through a given point).

G.GPE.6: Find the point on a directed line segment between two given points that partitions the segment in a given ratio.

52.

What is the coordinate of the midpoint of \overline{AB} ?



- A. -2
- B. -1
- C. 3
- D. 6

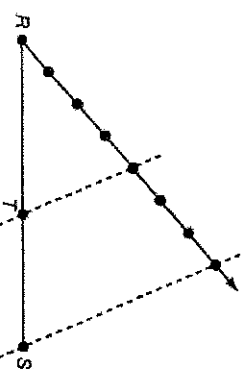
53.

On a number line, m is halfway between p and q . Which equation shows the correct value of p , in terms of m and q ?

- A. $p = \frac{m-q}{2}$
- B. $p = \frac{m+q}{2}$
- C. $p = 2m - q$
- D. $p = 2m + q$

54.

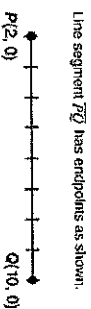
Look at the diagram below.



What is the ratio of line segment \overline{RT} to line segment \overline{TS} ?

- A. 4:3
- B. 3:7
- C. 3:4
- D. 4:7

55.



Where should you plot point X so that

PX is $\frac{3}{4}$ of the length of PQ?

- A. (4, 0)
- B. (6, 0)
- C. (7, 0)
- D. (8, 0)

Where should you plot X so it divides PQ in a ratio of 3:4?

- A. (5 $\frac{3}{7}$, 0)
- B. (4 $\frac{2}{7}$, 0)
- C. (4 $\frac{4}{7}$, 0)
- D. (3 $\frac{3}{7}$, 0)

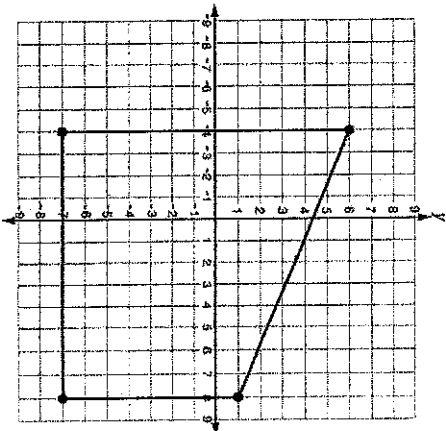
G.GPE.7. Use coordinates to compute perimeters of polygons and areas of triangles and rectangles, e.g., using the distance formula.

56. 57.

In a triangle with coordinates $(1, 4)$, $(2, 6)$, and $(5, 4)$, what would be the perimeter rounded to the nearest hundredth?

- A. 5.23
- B. 13.12
- C. 58.00
- D. 172.13

57. What is the total area, in square units, of the figure shown below?



- A. 46
- B. 78
- C. 114
- D. 126

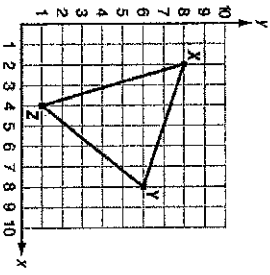
58.

A segment with endpoints $(-4, 5)$ and $(2, -3)$ is the hypotenuse of a right triangle. What is the perimeter of the triangle?

- A. 10
- B. 14
- C. 24
- D. 30

59.

What is the perimeter of the triangle shown below?



- A. 18
- B. 20
- C. 52
- D. 134

60.

Parallelogram $ABCD$ has vertices $A(1, 9)$, $B(5, 6)$, $C(2, 2)$, and $D(-2, 5)$. What is the perimeter of parallelogram $ABCD$?

- A. 5 units
- B. 10 units
- C. 20 units
- D. 25 units