



THE B.E.S.T. STANDARDS

*Benchmarks for Excellent Student Thinking*

# Geometry EOC Assessment

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**Test Release: 2025**

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# Introduction

[Section 1008.22\(8\)](#), Florida Statutes (F.S.), requires the Department to publish each statewide, standardized assessment administered, excluding retakes, at least once on a triennial basis, with the initial publication occurring after the Spring 2024 test administration. The initial publication of assessments was required to include, at a minimum, the grade 3 Mathematics and English Language Arts (ELA) Reading assessments, the grade 10 ELA Reading assessment and the Algebra 1 End-of-Course (EOC) Assessment. Per statute, released content must have appeared on tests in the administration year immediately preceding release. Based on those requirements, below is a proposed timeline for the release of operational tests beginning with the 2023–24 school year.

June 2024	June 2025	June 2026
Grade 3 Mathematics & ELA Reading	Grade 5 Mathematics & ELA Reading	Grade 4 Mathematics & ELA Reading
Grade 6 Mathematics & ELA Reading	Grade 8 Mathematics & ELA Reading	Grade 7 Mathematics & ELA Reading
Grade 8 Science	Grade 5 Science	Biology 1 EOC
Grade 10 ELA Reading	Grade 9 ELA Reading	
Algebra 1 EOC	Geometry EOC	
Civics EOC	U.S. History EOC	
Annually: Grades 4–10 Writing prompts and individual student responses		

The purpose of the released tests is to promote transparency in the statewide, standardized assessment program and to increase the comfort level of students and parents with the state assessments. Students, parents, and teachers should use the released tests to better understand the types of items on Florida’s K–12 statewide assessments.

Each released test will include content that represents an operational test blueprint for each respective assessment. The released tests can also be used to illustrate the length of an operational test and the range of difficulties of the questions on that test.

Each released test will include an answer key, the percentage of students that answered that item correctly, the item’s reporting category, and the item benchmark information.

Released tests can be accessed through the Sample Items card on the [Florida Statewide Assessments Portal](#).

For more information about K–12 assessments, please visit <https://www.fldoe.org/accountability/assessments/k-12-student-assessment/>.

For questions related to this document or released tests in general, please contact [Assessment@fldoe.org](mailto:Assessment@fldoe.org).

1. Two statements about triangle  $JKL$  are shown.

- $m \angle L = 90^\circ$
- $\sin(J) = \frac{99}{101}$

Which ratio represents  $\cos(K)$ ?

- Ⓐ  $\frac{101}{99}$
- Ⓑ  $\frac{99}{101}$
- Ⓒ  $\frac{20}{101}$
- Ⓓ  $\frac{20}{99}$

**Answer Key:** B

**Percentage of Students Answering Correctly:** 40%

**Reporting Category:** Measurement and Coordinate Geometry

**Benchmark:** MA.912.T.1.1

**Benchmark Description:** Define trigonometric ratios for acute angles in right triangles.

## Geometry EOC Test Release Support Document

2. Line segment  $MN$  has endpoints  $M (-7, 10)$  and  $N (-1, 1)$ . Point  $P$  is on line segment  $MN$  such that the ratio  $MP:PN$  is 2:1.

What is the  $x$ -coordinate of point  $P$ ?

-3

← → ↶ ↷ ✕

1	2	3	
4	5	6	
7	8	9	
	0		
.	-	$\frac{\square}{\square}$	

**Answer Key:** -3, or any equivalent value

**Percentage of Students Answering Correctly:** 23%

**Reporting Category:** Measurement and Coordinate Geometry

**Benchmark:** MA.912.GR.3.3

**Benchmark Description:** Use coordinate geometry to solve mathematical and real-world geometric problems involving lines, circles, triangles and quadrilaterals.

## Geometry EOC Test Release Support Document

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3. Which statement is true when a three-dimensional figure is dilated by a given scale factor?
- Ⓐ A dilation by a scale factor of  $\frac{2}{3}$  results in an increase in volume.
  - Ⓑ A dilation by a scale factor of 0.1 results in no change in volume.
  - Ⓒ A dilation by a scale factor of  $\frac{3}{2}$  results in a decrease in surface area.
  - Ⓓ A dilation by a scale factor of 3.5 results in an increase in surface area.

**Answer Key:** D

**Percentage of Students Answering Correctly:** 49%

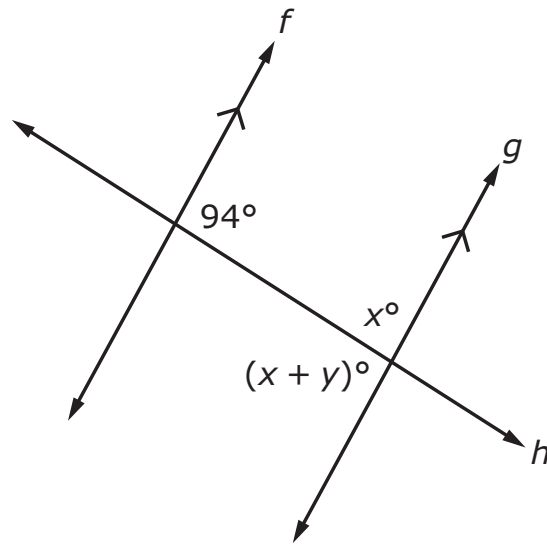
**Reporting Category:** Congruence, Similarity, and Constructions

**Benchmark:** MA.912.GR.4.3

**Benchmark Description:** Extend previous understanding of scale drawings and scale factors to determine how dilations affect the area of two-dimensional figures and the surface area or volume of three-dimensional figures.

# Geometry EOC Test Release Support Document

4. Two parallel lines,  $f$  and  $g$ , are cut by a transversal,  $h$ , as shown.



What are the values of  $x$  and  $y$ ?

$x =$

86				
←	→	↶	↷	✕
1	2	3		
4	5	6		
7	8	9		
	0			
.	-	$\frac{\square}{\square}$		

## Geometry EOC Test Release Support Document

$y =$

← → ↶ ↷ ✕

1	2	3
4	5	6
7	8	9
	0	
.	-	$\frac{\square}{\square}$

**Answer Key:** 86, 8, or any equivalent values

**Percentage of Students Answering Correctly:** 34%

**Reporting Category:** Logic, Relationships, and Theorems

**Benchmark:** MA.912.GR.1.1

**Benchmark Description:** Prove relationships and theorems about lines and angles. Solve mathematical and real-world problems involving postulates, relationships and theorems of lines and angles.

## Geometry EOC Test Release Support Document

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5. Which statement must be true for all parallelograms?

- Ⓐ Diagonals are congruent.
- Ⓑ Diagonals are perpendicular.
- Ⓒ Opposite angles are complementary.
- Ⓓ Consecutive angles are supplementary.

**Answer Key:** D

**Percentage of Students Answering Correctly:** 29%

**Reporting Category:** Logic, Relationships, and Theorems

**Benchmark:** MA.912.GR.1.4

**Benchmark Description:** Prove relationships and theorems about parallelograms. Solve mathematical and real-world problems involving postulates, relationships and theorems of parallelograms.

## Geometry EOC Test Release Support Document

6. A true statement is given.

“If two given shapes are circles, then the shapes are similar.”

Select the boxes to identify what could be the converse, inverse, and contrapositive of the given statement.

	Converse	Inverse	Contrapositive
<b>If two given shapes are not similar, then the shapes are not circles.</b>	Ⓐ	Ⓑ	Ⓒ
<b>If two given shapes are similar, then the shapes are circles.</b>	Ⓓ	Ⓔ	Ⓕ
<b>If two given shapes are not circles, then the shapes are not similar.</b>	Ⓖ	Ⓗ	Ⓖ

**Answer Key:** C, D, H

**Percentage of Students Answering Correctly:** 28%

**Reporting Category:** Logic, Relationships, and Theorems

**Benchmark:** MA.912.LT.4.3

**Benchmark Description:** Identify and accurately interpret “if...then,” “if and only if,” “all” and “not” statements. Find the converse, inverse and contrapositive of a statement.

## Geometry EOC Test Release Support Document

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7. This question has **two** parts.

The vertices of two triangles are given.

- The coordinates of the vertices of the first triangle are  $Q(2, 0)$ ,  $R(6, 0)$ , and  $S(2, 4)$ .
- The coordinates of the vertices of the second triangle are  $T(8, 0)$ ,  $U(4, -4)$ , and  $V(4, 0)$ .

### Part A

Which statement describes a relationship between the first and second triangles?

- Ⓐ  $\triangle QRS \cong \triangle TUV$
- Ⓑ  $\triangle QRS \cong \triangle VTU$
- Ⓒ  $\triangle QRS \sim \triangle TUV$
- Ⓓ  $\triangle QRS \sim \triangle UVT$

### Part B

Select expressions to create a transformation that proves the statement in Part A.

$$(x, y) \rightarrow ([\text{Ⓐ } 2x \text{ Ⓑ } -x \text{ Ⓒ } x + 2 \text{ Ⓓ } x - 2], [\text{Ⓐ } 2y \text{ Ⓑ } -y \text{ Ⓒ } y + 8 \text{ Ⓓ } y - 8])$$

**Answer Key:** B, C, B

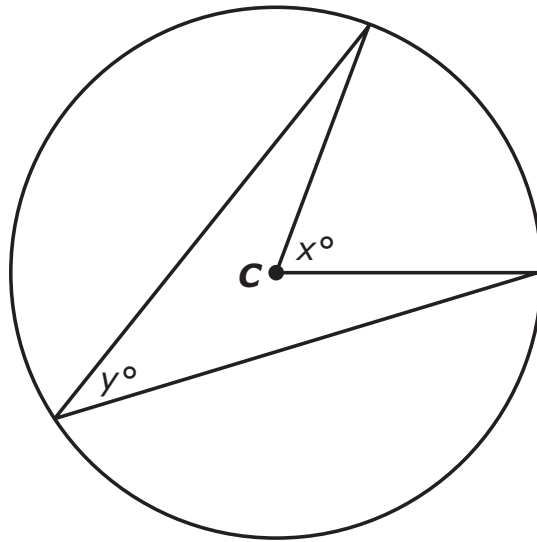
**Percentage of Students Answering Correctly:** 21%

**Reporting Category:** Congruence, Similarity, and Constructions

**Benchmark:** MA.912.GR.2.6

**Benchmark Description:** Apply rigid transformations to map one figure onto another to justify that the two figures are congruent.

8. An inscribed angle and a central angle are shown in circle C.



Create an equation to show the relationship between  $x$  and  $y$ .

$x = 2y$

← → ↶ ↷ ✕											
1	2	3	$x$	$y$							
4	5	6	+	-	•	÷					
7	8	9	<	≤	=	≥	>				
	0		$\square^\square$	$\square_\square$	( )		$\sqrt{\square}$	$\sqrt[\square]{\square}$	$\pi$	$i$	
.	-	$\frac{\square}{\square}$	sin	cos	tan	arcsin	arccos	arctan			

**Answer Key:**  $x = 2y$ , or any equivalent equation

**Percentage of Students Answering Correctly:** 25%

**Reporting Category:** Logic, Relationships, and Theorems

**Benchmark:** MA.912.GR.6.2

**Benchmark Description:** Solve mathematical and real-world problems involving the measures of arcs and related angles.

## Geometry EOC Test Release Support Document

9. Figure *A* is drawn on a coordinate plane. Transformations are performed on figure *A* to create figure *B*.

Select the boxes to identify whether each transformation performed on figure *A* results in a congruent or noncongruent figure *B*.

	Congruent	Noncongruent
$(x, y) \rightarrow (y, -x)$	<input checked="" type="radio"/> A	<input type="radio"/> B
$(x, y) \rightarrow \left(\frac{1}{2}x, \frac{1}{2}y\right)$	<input type="radio"/> C	<input checked="" type="radio"/> D
a reflection across the line $y = -x$	<input checked="" type="radio"/> E	<input type="radio"/> F
a 50-degree clockwise rotation about the origin	<input checked="" type="radio"/> G	<input type="radio"/> H

**Answer Key:** A, D, E, G

**Percentage of Students Answering Correctly:** 30%

**Reporting Category:** Congruence, Similarity, and Constructions

**Benchmark:** MA.912.GR.2.2

**Benchmark Description:** Identify transformations that do or do not preserve distance.

**10.** A line segment has an endpoint at  $(1, 1)$  and a midpoint at  $(1, -3)$ .

What are the coordinates of the other endpoint?

- Ⓐ  $(1, 5)$
- Ⓑ  $(1, -1)$
- Ⓒ  $(1, -5)$
- Ⓓ  $(1, -7)$

**Answer Key:** D

**Percentage of Students Answering Correctly:** 50%

**Reporting Category:** Measurement and Coordinate Geometry

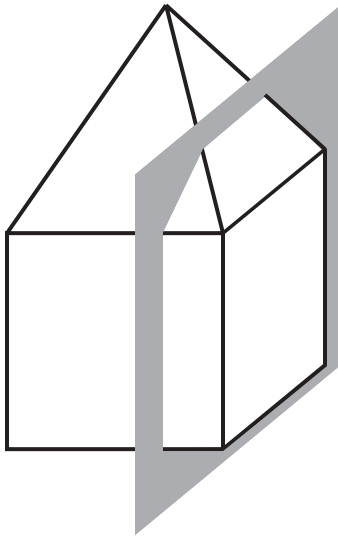
**Benchmark:** MA.912.GR.3.3

**Benchmark Description:** Use coordinate geometry to solve mathematical and real-world geometric problems involving lines, circles, triangles and quadrilaterals.

## Geometry EOC Test Release Support Document

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11. The figure consisting of a right pyramid and a right rectangular prism is sliced perpendicular to its base, as shown.



What is the shape of the resulting cross section?

- Ⓐ a rectangle
- Ⓑ a trapezoid
- Ⓒ a composite shape made up of a rectangle and a triangle
- Ⓓ a composite shape made up of a rectangle and a trapezoid

**Answer Key:** D

**Percentage of Students Answering Correctly:** 55%

**Reporting Category:** Measurement and Coordinate Geometry

**Benchmark:** MA.912.GR.4.1

**Benchmark Description:** Identify the shapes of two-dimensional cross-sections of three-dimensional figures.

## Geometry EOC Test Release Support Document

12. A triangle has vertices at  $T(2, 5)$ ,  $U(6, 6)$ , and  $V(4, -3)$ .

Complete the statements to explain why triangle  $TUV$  is a right triangle.

The slope of  $\overline{TU}$  is

$$\frac{1}{4}$$

←	→	↶	↷	✖
1	2	3		
4	5	6		
7	8	9		
	0			
.	-	$\frac{\square}{\square}$		

and the slope of  $\overline{TV}$  is

$$-4$$

←	→	↶	↷	✖
1	2	3		
4	5	6		
7	8	9		
	0			
.	-	$\frac{\square}{\square}$		

Triangle  $TUV$  is a right triangle because  $\overline{TU}$  and  $\overline{TV}$  are  
[Ⓐ skewed Ⓑ parallel Ⓒ perpendicular] and therefore form a right angle.

## Geometry EOC Test Release Support Document

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**Answer Key:**  $\frac{1}{4}$ , -4 (or any equivalent values), C

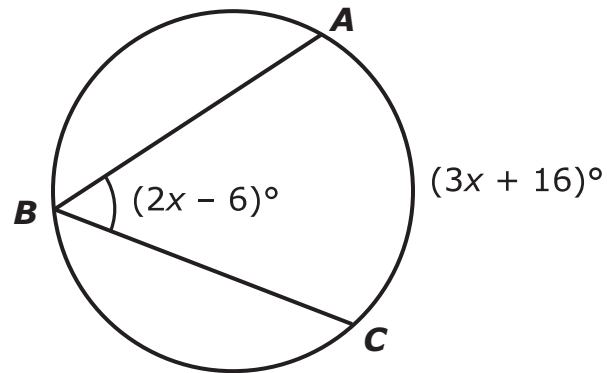
**Percentage of Students Answering Correctly:** 24%

**Reporting Category:** Measurement and Coordinate Geometry

**Benchmark:** MA.912.GR.3.2

**Benchmark Description:** Given a mathematical or real-world context, use coordinate geometry to classify or justify definitions, properties and theorems involving circles, triangles or quadrilaterals.

13. Points  $A$ ,  $B$ , and  $C$  lie on the circle, as shown.



- The measure of  $\angle ABC$  is  $(2x - 6)^\circ$ .
- The measure of  $\widehat{AC}$  is  $(3x + 16)^\circ$ .

What is the measure, in degrees, of  $\angle ABC$ ?

50

← → ↶ ↷ ✖

1	2	3
4	5	6
7	8	9
	0	
.	-	$\frac{\square}{\square}$

**Answer Key:** 50, or any equivalent value

**Percentage of Students Answering Correctly:** 21%

**Reporting Category:** Logic, Relationships, and Theorems

**Benchmark:** MA.912.GR.6.2

**Benchmark Description:** Solve mathematical and real-world problems involving the measures of arcs and related angles.

## Geometry EOC Test Release Support Document

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14. A cone has a radius of 3 units, a height of 4 units, and a slant height of 5 units.

Which expression represents the surface area, in square units, of the cone?

- Ⓐ  $15\pi$
- Ⓑ  $21\pi$
- Ⓒ  $24\pi$
- Ⓓ  $29\pi$

**Answer Key:** C

**Percentage of Students Answering Correctly:** 43%

**Reporting Category:** Measurement and Coordinate Geometry

**Benchmark:** MA.912.GR.4.6

**Benchmark Description:** Solve mathematical and real-world problems involving the surface area of three-dimensional figures limited to cylinders, pyramids, prisms, cones and spheres.

**15.** Rectangle  $ABCD$  has the given side lengths.

- $AB = 5$  units
- $BC = 11$  units

Rectangle  $PQRS$  is congruent to rectangle  $ABCD$ .

What is the length of  $\overline{QR}$ , in units?

11

← → ↶ ↷ ✖

1	2	3	
4	5	6	
7	8	9	
	0		
.	-	$\frac{\square}{\square}$	

**Answer Key:** 11, or any equivalent value

**Percentage of Students Answering Correctly:** 63%

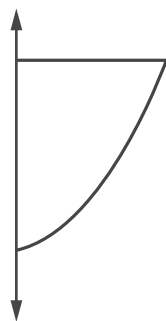
**Reporting Category:** Congruence, Similarity, and Constructions

**Benchmark:** MA.912.GR.1.6

**Benchmark Description:** Solve mathematical and real-world problems involving congruence or similarity in two-dimensional figures.

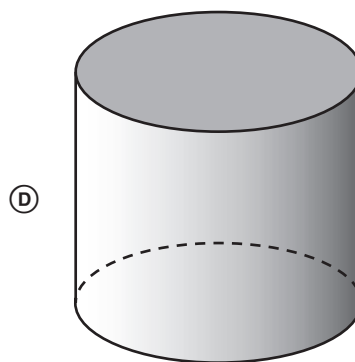
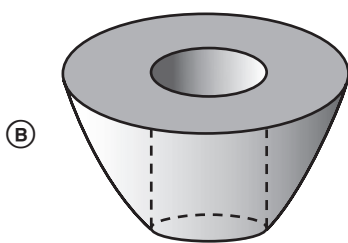
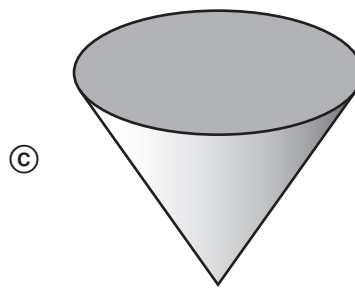
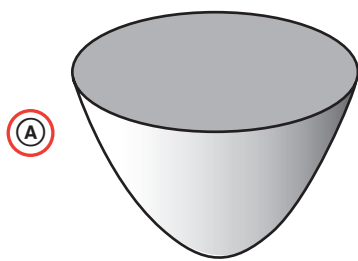
## Geometry EOC Test Release Support Document

16. A two-dimensional figure and a vertical line are shown.



The figure is rotated about the vertical line.

Which object could be the result of this rotation?



**Answer Key:** A

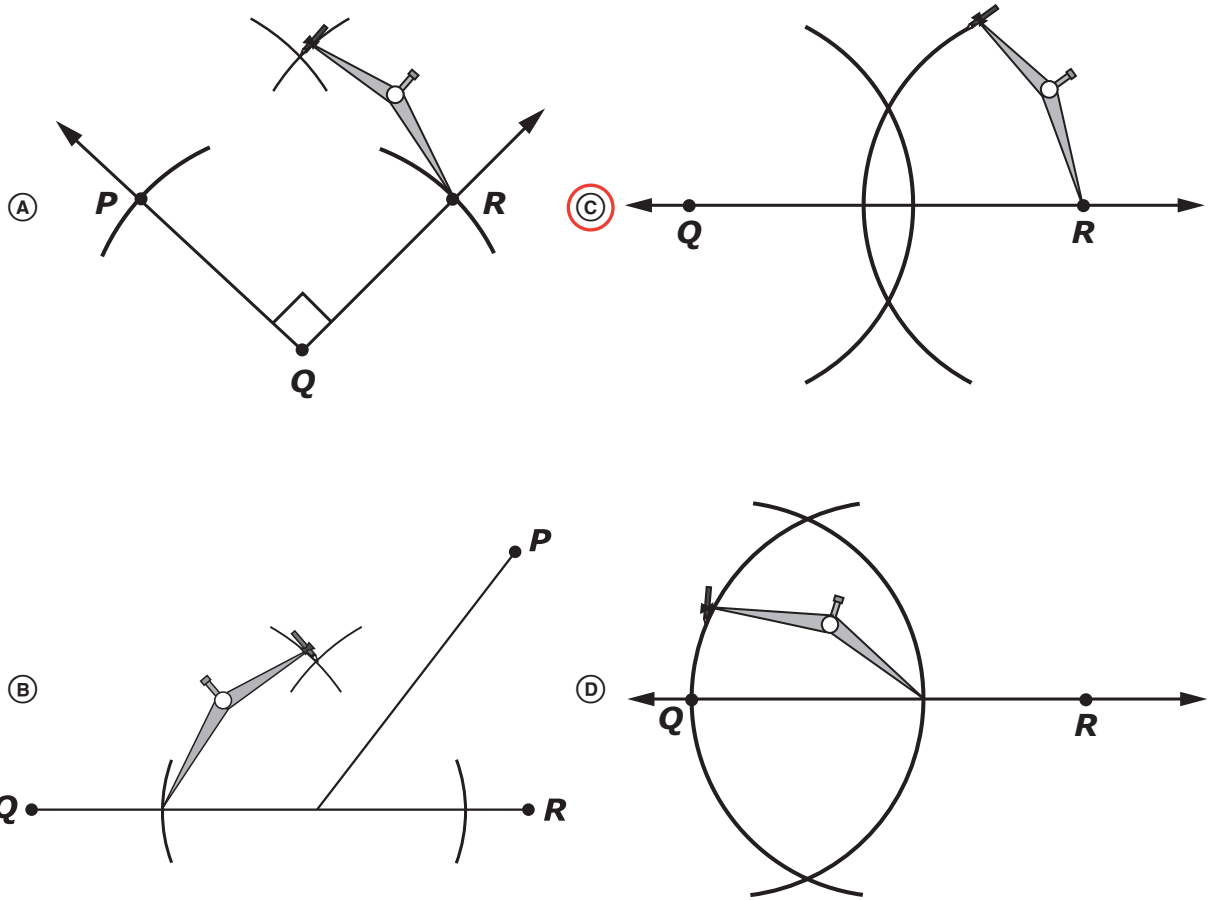
**Percentage of Students Answering Correctly:** 81%

**Reporting Category:** Measurement and Coordinate Geometry

**Benchmark:** MA.912.GR.4.2

**Benchmark Description:** Identify three-dimensional objects generated by rotations of two-dimensional figures.

17. Which figure shows steps leading to the construction of a perpendicular bisector?



**Answer Key:** C

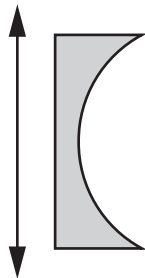
**Percentage of Students Answering Correctly:** 39%

**Reporting Category:** Congruence, Similarity, and Constructions

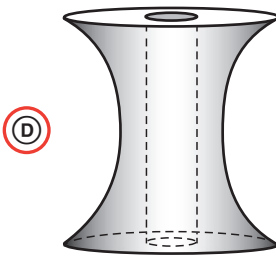
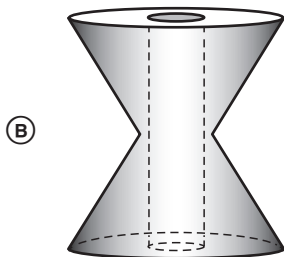
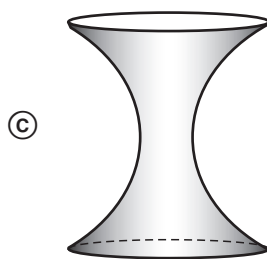
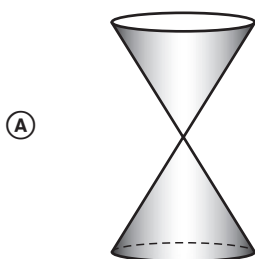
**Benchmark:** MA.912.GR.5.2

**Benchmark Description:** Construct the bisector of a segment or an angle, including the perpendicular bisector of a line segment.

18. A figure and a vertical line are shown.



Which object is generated by rotating the figure around the vertical line?



**Answer Key:** D

**Percentage of Students Answering Correctly:** 60%

**Reporting Category:** Measurement and Coordinate Geometry

**Benchmark:** MA.912.GR.4.2

**Benchmark Description:** Identify three-dimensional objects generated by rotations of two-dimensional figures.

## Geometry EOC Test Release Support Document

19. Triangle  $M$  has a base length of 18 inches and a height of 12 inches. Triangle  $N$  is congruent to triangle  $M$ .

What is the area, in square inches, of triangle  $N$ ?

108

← → ↶ ↷ ✕

1	2	3	
4	5	6	
7	8	9	
	0		
.	-	$\frac{\square}{\square}$	

**Answer Key:** 108, or any equivalent value

**Percentage of Students Answering Correctly:** 34%

**Reporting Category:** Congruence, Similarity, and Constructions

**Benchmark:** MA.912.GR.1.6

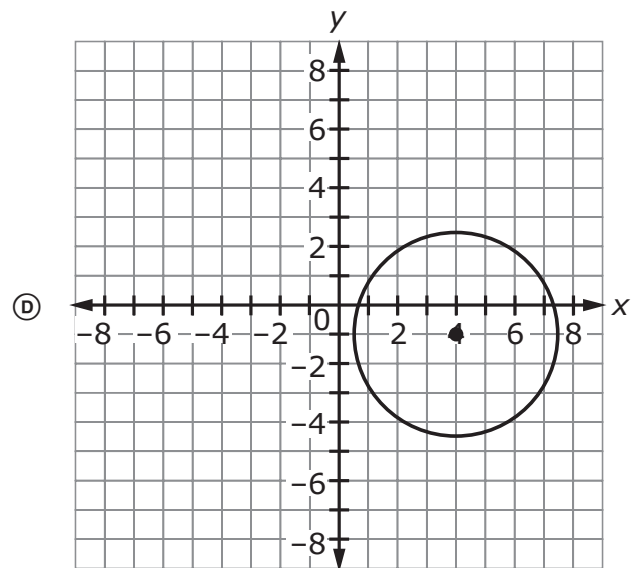
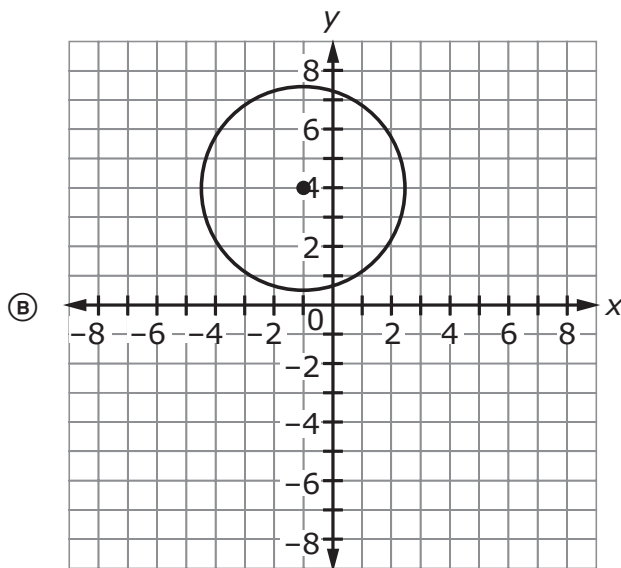
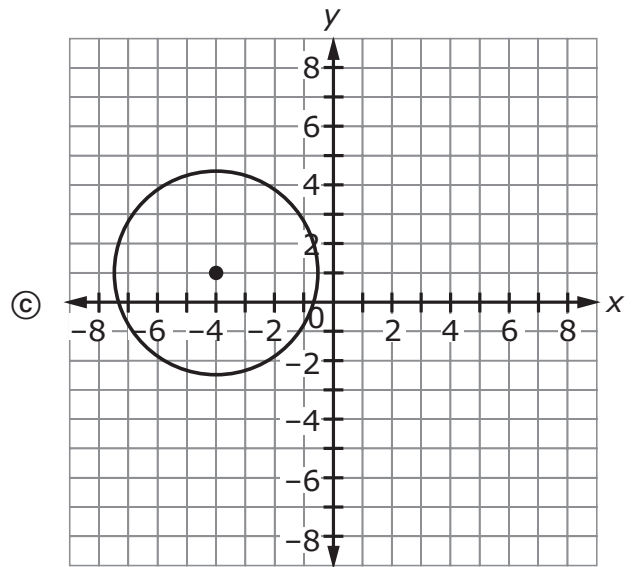
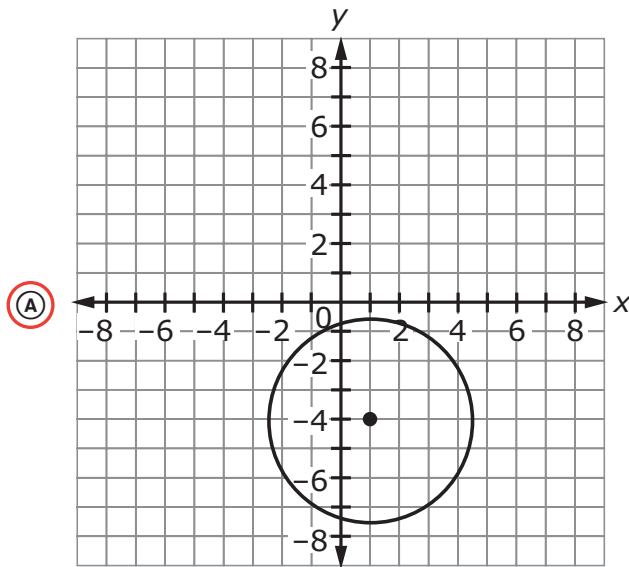
**Benchmark Description:** Solve mathematical and real-world problems involving congruence or similarity in two-dimensional figures.

# Geometry EOC Test Release Support Document

20. The equation of a circle is given.

$$(x - 1)^2 + (y + 4)^2 = 12.25$$

Which graph represents the equation?



## Geometry EOC Test Release Support Document

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**Answer Key:** A

**Percentage of Students Answering Correctly:** 34%

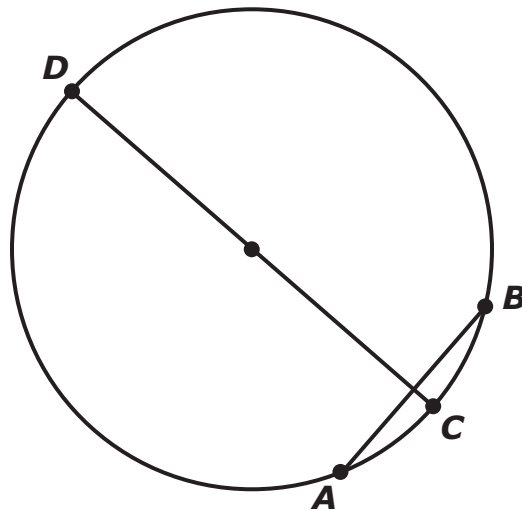
**Reporting Category:** Measurement and Coordinate Geometry

**Benchmark:** MA.912.GR.7.3

**Benchmark Description:** Graph and solve mathematical and real-world problems that are modeled with an equation of a circle. Determine and interpret key features in terms of the context.

## Geometry EOC Test Release Support Document

21. A circle with chord  $AB$  and its perpendicular bisector  $CD$  is shown.



The measure of  $\widehat{AC}$  is  $28^\circ$ .

What is the measure, in degrees, of  $\widehat{BD}$ ?

152				
←	→	↶	↷	✖
1	2	3		
4	5	6		
7	8	9		
	0			
.	-	$\frac{\square}{\square}$		

**Answer Key:** 152, or any equivalent value

**Percentage of Students Answering Correctly:** 42%

**Reporting Category:** Logic, Relationships, and Theorems

**Benchmark:** MA.912.GR.6.2

**Benchmark Description:** Solve mathematical and real-world problems involving the measures of arcs and related angles.

## Geometry EOC Test Release Support Document

22. Triangle  $XYZ$  is transformed to create triangle  $X'Y'Z'$  using the rule  $(x, y) \rightarrow (x + b, y + c)$ .

- Triangle  $XYZ$  has the vertices  $(3, -2)$ ,  $(3, -4)$ , and  $(0, -4)$ , respectively.
- Triangle  $X'Y'Z'$  has the vertices  $(-1, 5)$ ,  $(-1, 3)$ , and  $(-4, 3)$ , respectively.

What are the values of  $b$  and  $c$ ?

$b =$

←	→	↶	↷	✖
1	2	3		
4	5	6		
7	8	9		
	0			
.	-	$\frac{\square}{\square}$		

$c =$

←	→	↶	↷	✖
1	2	3		
4	5	6		
7	8	9		
	0			
.	-	$\frac{\square}{\square}$		

## Geometry EOC Test Release Support Document

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**Answer Key:**  $-4$ ,  $7$ , or any equivalent values

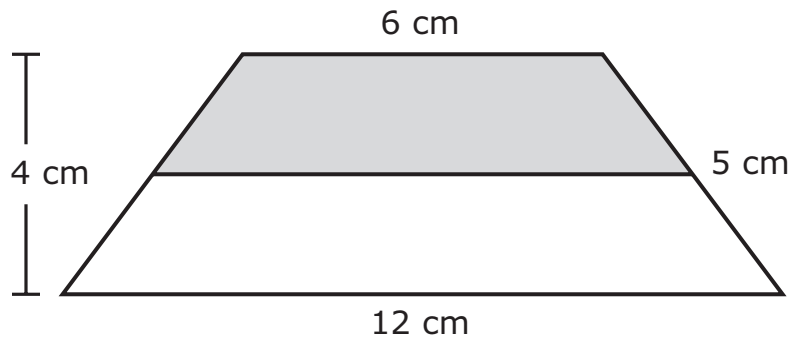
**Percentage of Students Answering Correctly:** 46%

**Reporting Category:** Congruence, Similarity, and Constructions

**Benchmark:** MA.912.GR.2.1

**Benchmark Description:** Given a preimage and image, describe the transformation and represent the transformation algebraically using coordinates.

23. A tile is in the shape of an isosceles trapezoid. The tile is divided into 2 parts by its midsegment. The trapezoid, with lengths in centimeters (cm), is shown.



The top part is shaded.

What is the area, in square centimeters, of the shaded part?

- (A) 12
- (B) 15
- (C) 18
- (D) 36

**Answer Key:** B

**Percentage of Students Answering Correctly:** 37%

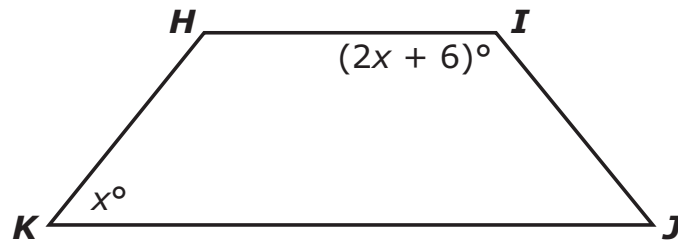
**Reporting Category:** Logic, Relationships, and Theorems

**Benchmark:** MA.912.GR.1.5

**Benchmark Description:** Prove relationships and theorems about trapezoids. Solve mathematical and real-world problems involving postulates, relationships and theorems of trapezoids.

## Geometry EOC Test Release Support Document

24. An isosceles trapezoid is shown.



What is the measure of  $\angle HIJ$ , in degrees?

122

← → ↶ ↷ ✕

1	2	3
4	5	6
7	8	9
	0	
.	-	$\frac{\square}{\square}$

**Answer Key:** 122, or any equivalent value

**Percentage of Students Answering Correctly:** 29%

**Reporting Category:** Logic, Relationships, and Theorems

**Benchmark:** MA.912.GR.1.5

**Benchmark Description:** Prove relationships and theorems about trapezoids. Solve mathematical and real-world problems involving postulates, relationships and theorems of trapezoids.

## Geometry EOC Test Release Support Document

25. Rectangle  $G$  has a length of 15 inches and a width of 20 inches. Rectangle  $H$  is similar to rectangle  $G$  and has a length of 18 feet.

What is the width, in feet, of rectangle  $H$ ?

24

← → ↶ ↷ ✕

1	2	3
4	5	6
7	8	9
	0	
.	-	$\frac{\square}{\square}$

**Answer Key:** 24, or any equivalent value

**Percentage of Students Answering Correctly:** 26%

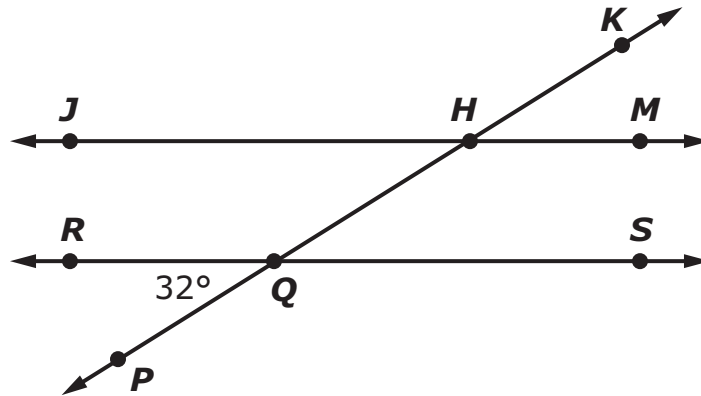
**Reporting Category:** Congruence, Similarity, and Constructions

**Benchmark:** MA.912.GR.1.6

**Benchmark Description:** Solve mathematical and real-world problems involving congruence or similarity in two-dimensional figures.

## Geometry EOC Test Release Support Document

26. Transversal line  $KP$  passes through parallel lines  $JM$  and  $RS$ , as shown.



Complete the sentences to describe angle  $QHJ$ .

Angles  $PQR$  and  $QHJ$  are [ A] congruent [ B] supplementary  
[ C] complementary] because they are [ A] consecutive [ B] corresponding  
[ C] alternate exterior] angles.

The measure of angle  $QHJ$  is

32				
←	→	↶	↷	✕
1	2	3		
4	5	6		
7	8	9		
	0			
.	-	$\frac{\square}{\square}$		

**Answer Key:** A, B, 32 (or any equivalent value)

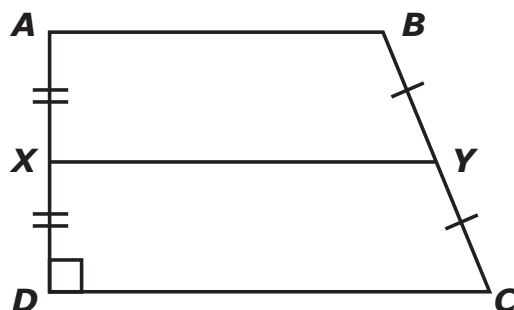
**Percentage of Students Answering Correctly:** 38%

**Reporting Category:** Logic, Relationships, and Theorems

**Benchmark:** MA.912.GR.1.1

**Benchmark Description:** Prove relationships and theorems about lines and angles. Solve mathematical and real-world problems involving postulates, relationships and theorems of lines and angles.

27. Trapezoid  $ABCD$  is shown.



Select all the true statements.

- Ⓐ  $\overline{AX} \cong \overline{BY}$
- Ⓑ  $\overline{DX} \cong \overline{CY}$
- Ⓒ  $\overline{XY} \parallel \overline{CD}$
- Ⓓ  $XY = \frac{1}{2}(AB + CD)$
- Ⓔ trapezoid  $ABYX \cong$  trapezoid  $XYCD$

**Answer Key:** C, D

**Percentage of Students Answering Correctly:** 23%

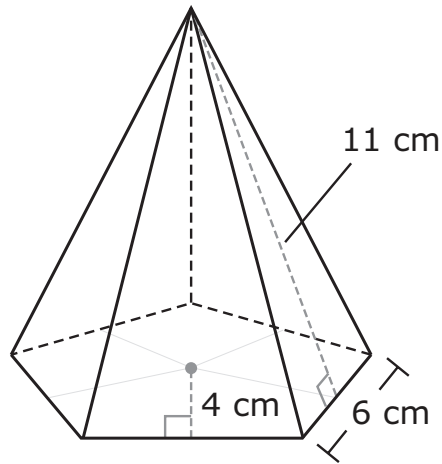
**Reporting Category:** Logic, Relationships, and Theorems

**Benchmark:** MA.912.GR.1.5

**Benchmark Description:** Prove relationships and theorems about trapezoids. Solve mathematical and real-world problems involving postulates, relationships and theorems of trapezoids.

## Geometry EOC Test Release Support Document

28. A regular pentagonal pyramid is shown, with units in centimeters (cm). The slant height is 11 cm, the apothem of the base is 4 cm, and the side length of the base is 6 cm.



Which expression represents the surface area, in square centimeters, of the pyramid?

- (A)  $\frac{6 \cdot 11 \cdot 5}{2}$
- (B)  $6\left(4 + \frac{5 \cdot 11}{2}\right)$
- (C)  $\frac{4 \cdot 11}{2}(6 + 5)$
- (D)  $\frac{6 \cdot 5}{2}(4 + 11)$

**Answer Key:** D

**Percentage of Students Answering Correctly:** 22%

**Reporting Category:** Measurement and Coordinate Geometry

**Benchmark:** MA.912.GR.4.6

**Benchmark Description:** Solve mathematical and real-world problems involving the surface area of three-dimensional figures limited to cylinders, pyramids, prisms, cones and spheres.

## Geometry EOC Test Release Support Document

29. Ashleigh draws a map of her town on a coordinate grid, where each unit represents 1 mile. A pizza shop in the town delivers to any location within a 6-mile radius.

- Ashleigh's house is located at point (9, 3).
- The pizza shop is located at point (6, 7).

Complete the sentences to describe whether Ashleigh's house is within the delivery radius of the pizza shop.

The shortest distance from the pizza shop to Ashleigh's house is

5			miles.	
←	→	↶	↷	✖
1	2	3		
4	5	6		
7	8	9		
	0			
.	-	$\frac{\square}{\square}$		

Therefore, Ashleigh's house is [(A) within (B) outside] the delivery radius of the pizza shop.

**Answer Key:** 5 (or any equivalent value), A

**Percentage of Students Answering Correctly:** 34%

**Reporting Category:** Measurement and Coordinate Geometry

**Benchmark:** MA.912.GR.3.2

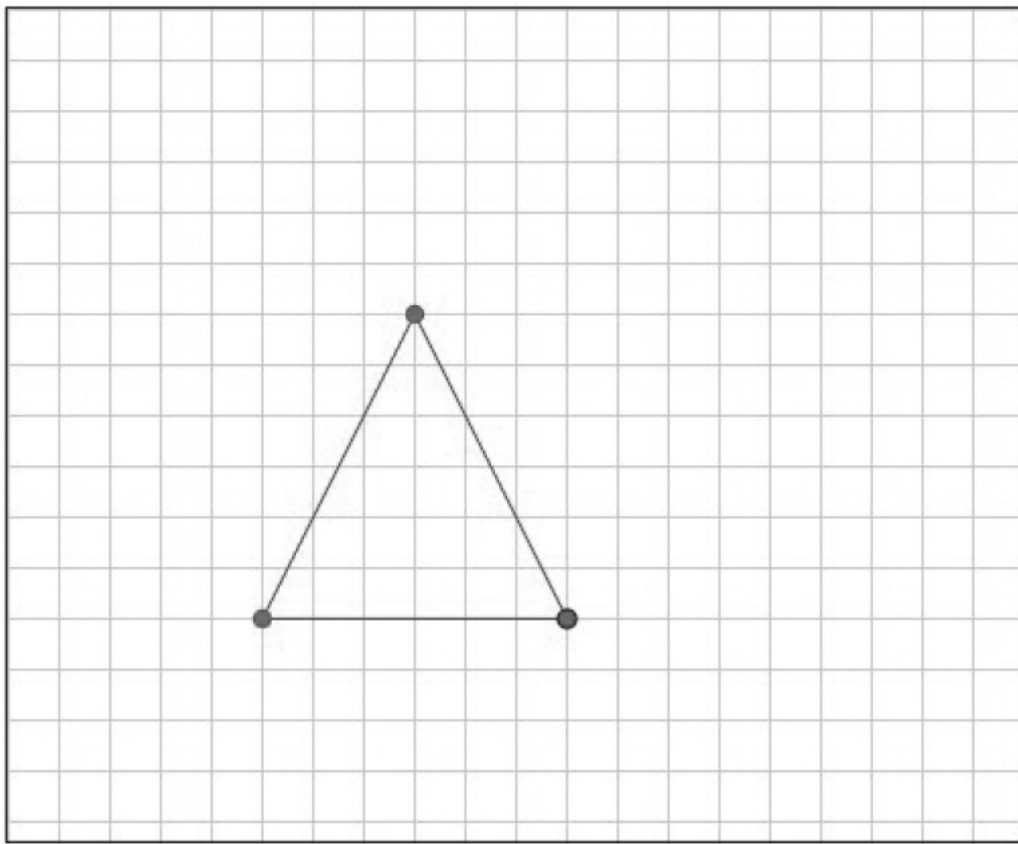
**Benchmark Description:** Given a mathematical or real-world context, use coordinate geometry to classify or justify definitions, properties and theorems involving circles, triangles or quadrilaterals.

## Geometry EOC Test Release Support Document

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- 30.** Kyla claims that the sum of the interior angles of any closed figure is 360 degrees or greater.

Use the Connect Line tool to draw a figure that is a counterexample to Kyla's claim.



**Answer Key:** any triangle

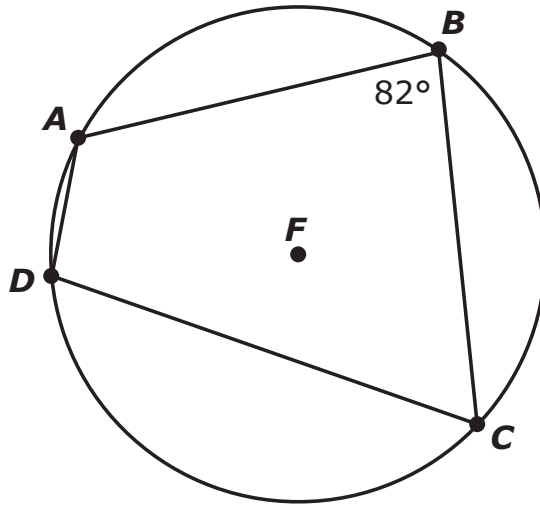
**Percentage of Students Answering Correctly:** 51%

**Reporting Category:** Logic, Relationships, and Theorems

**Benchmark:** MA.912.LT.4.10

**Benchmark Description:** Judge the validity of arguments and give counterexamples to disprove statements.

31. Quadrilateral  $ABCD$  is inscribed in circle  $F$ , as shown.



Complete the statements to describe the measure, in degrees, of  $\angle ADC$ .

Angle  $ABC$  and angle  $ADC$  are [  $\text{\textcircled{A}}$  complementary.   $\text{\textcircled{B}}$  congruent.   $\text{\textcircled{C}}$  supplementary.]

This means the measure of  $\angle ADC =$

98	°															
.																
<div style="display: flex; justify-content: space-between; align-items: center; border-bottom: 1px solid gray; margin-bottom: 5px;"> <span>←</span> <span>→</span> <span>↶</span> <span>↷</span> <span>✖</span> </div> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 33px; height: 33px;">1</td> <td style="width: 33px; height: 33px;">2</td> <td style="width: 33px; height: 33px;">3</td> </tr> <tr> <td style="width: 33px; height: 33px;">4</td> <td style="width: 33px; height: 33px;">5</td> <td style="width: 33px; height: 33px;">6</td> </tr> <tr> <td style="width: 33px; height: 33px;">7</td> <td style="width: 33px; height: 33px;">8</td> <td style="width: 33px; height: 33px;">9</td> </tr> <tr> <td style="width: 33px; height: 33px;"></td> <td style="width: 33px; height: 33px;">0</td> <td style="width: 33px; height: 33px;"></td> </tr> <tr> <td style="width: 33px; height: 33px;">.</td> <td style="width: 33px; height: 33px;">-</td> <td style="width: 33px; height: 33px;"><math>\frac{\square}{\square}</math></td> </tr> </table>		1	2	3	4	5	6	7	8	9		0		.	-	$\frac{\square}{\square}$
1	2	3														
4	5	6														
7	8	9														
	0															
.	-	$\frac{\square}{\square}$														

## Geometry EOC Test Release Support Document

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**Answer Key:** C,  $98^\circ$  (or any equivalent value)

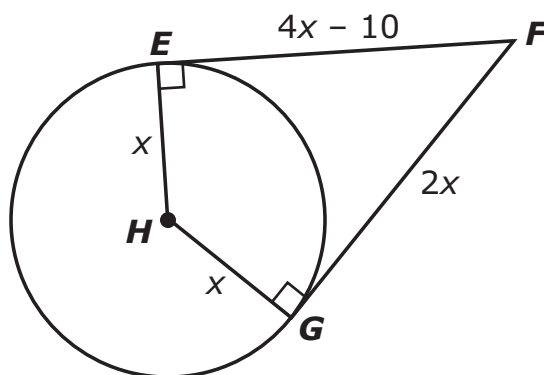
**Percentage of Students Answering Correctly:** 33%

**Reporting Category:** Logic, Relationships, and Theorems

**Benchmark:** MA.912.GR.6.3

**Benchmark Description:** Solve mathematical problems involving triangles and quadrilaterals inscribed in a circle.

32. A circle with two tangent segments is shown.



This question has **two** parts.

**Part A**

Which equation is true?

- Ⓐ  $(4x - 10) = 2x$
- Ⓑ  $x(4x - 10) = (2x)$
- Ⓒ  $(4x - 10) + 2x = 180$
- Ⓓ  $x + x + 2x + (4x - 10) = 360$

## Geometry EOC Test Release Support Document

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### Part B

What is the value of  $x$ ?

5				
←	→	↶	↷	✖
1	2	3		
4	5	6		
7	8	9		
	0			
.	-	$\frac{\square}{\square}$		

**Answer Key:** A, 5 (or any equivalent value)

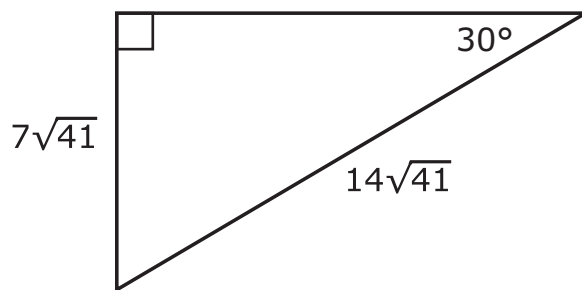
**Percentage of Students Answering Correctly:** 51%

**Reporting Category:** Logic, Relationships, and Theorems

**Benchmark:** MA.912.GR.6.1

**Benchmark Description:** Solve mathematical and real-world problems involving the length of a secant, tangent, segment or chord in a given circle.

33. A right triangle is shown, with side lengths in units.



Select an expression to complete the trigonometric ratio for the triangle.

$$\tan(30^\circ) = \frac{7\sqrt{41}}{\quad}$$

[ Ⓐ  $7\sqrt{41}$    Ⓑ  $14\sqrt{41}$    Ⓒ  $7\sqrt{123}$    Ⓓ  $14\sqrt{123}$  ]

**Answer Key:** C

**Percentage of Students Answering Correctly:** 36%

**Reporting Category:** Measurement and Coordinate Geometry

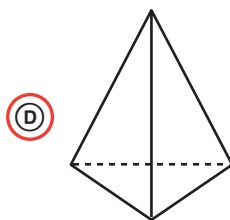
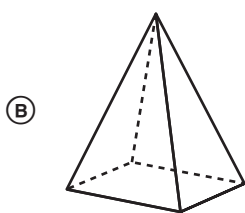
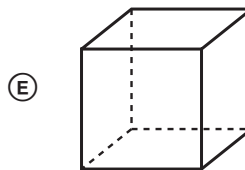
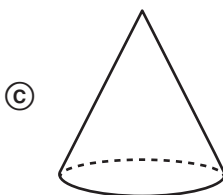
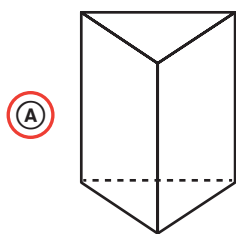
**Benchmark:** MA.912.T.1.2

**Benchmark Description:** Solve mathematical and real-world problems involving right triangles using trigonometric ratios and the Pythagorean Theorem.

## Geometry EOC Test Release Support Document

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34. Select all the figures that have a triangular cross section when sliced parallel to their bases.



**Answer Key:** A, D

**Percentage of Students Answering Correctly:** 44%

**Reporting Category:** Measurement and Coordinate Geometry

**Benchmark:** MA.912.GR.4.1

**Benchmark Description:** Identify the shapes of two-dimensional cross-sections of three-dimensional figures.

- 35.** Prism  $A$  is dilated by a scale factor greater than 0 and less than 1 to create prism  $B$ .

Complete the sentences to compare the volume and surface area of the two prisms.

The volume of prism  $A$  is [ **A**] equal to [ **B**] less than [ **C**] greater than] the volume of prism  $B$ .

The surface area of prism  $A$  is [ **A**] equal to [ **B**] less than [ **C**] greater than] the surface area of prism  $B$ .

**Answer Key:** C, C

**Percentage of Students Answering Correctly:** 30%

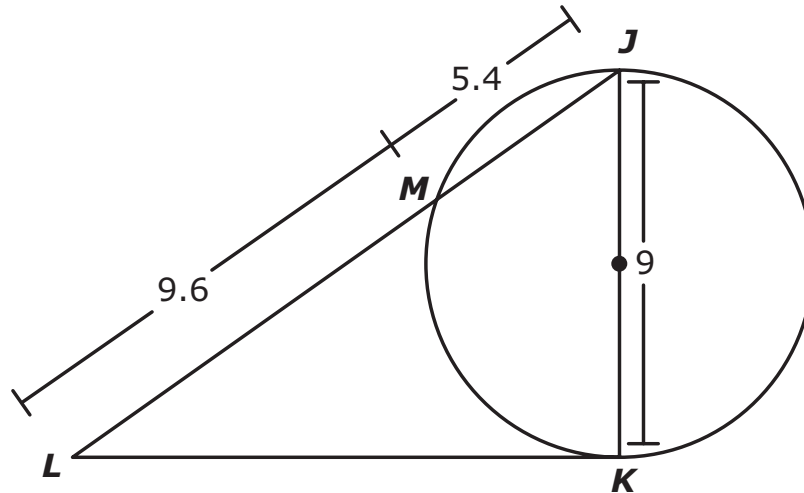
**Reporting Category:** Congruence, Similarity, and Constructions

**Benchmark:** MA.912.GR.4.3

**Benchmark Description:** Extend previous understanding of scale drawings and scale factors to determine how dilations affect the area of two-dimensional figures and the surface area or volume of three-dimensional figures.

## Geometry EOC Test Release Support Document

36. Line segments  $JK$ ,  $KL$ , and  $LJ$  form triangle  $JKL$ , as shown, with dimensions in units.



- Segment  $KL$  is tangent to the circle.
- Segment  $LJ$  is a secant of the circle.
- Segment  $JK$  is a diameter of the circle.

What is the perimeter, in units, of triangle  $JKL$ ?

36

← → ↶ ↷ ✕

1	2	3
4	5	6
7	8	9
	0	
.	-	$\frac{\square}{\square}$

## Geometry EOC Test Release Support Document

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**Answer Key:** 36, or any equivalent value

**Percentage of Students Answering Correctly:** 28%

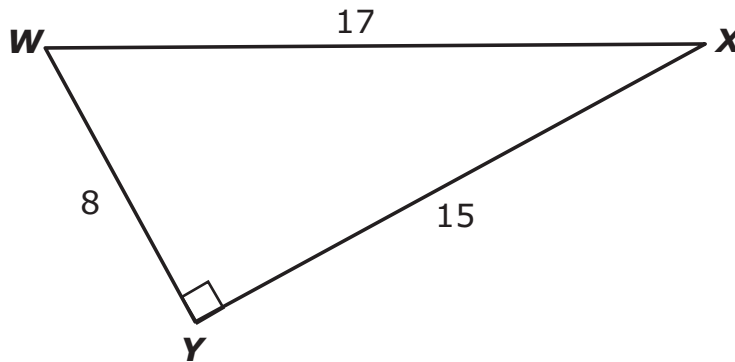
**Reporting Category:** Logic, Relationships, and Theorems

**Benchmark:** MA.912.GR.6.1

**Benchmark Description:** Solve mathematical and real-world problems involving the length of a secant, tangent, segment or chord in a given circle.

## Geometry EOC Test Release Support Document

37. Triangle  $WXY$  is shown, with side lengths in units.



Match each trigonometric ratio to its value.

	$\frac{15}{17}$	$\frac{17}{15}$	$\frac{8}{17}$	$\frac{17}{8}$	$\frac{8}{15}$	$\frac{15}{8}$
$\cos(x)$	(A)	(B)	(C)	(D)	(E)	(F)
$\tan(W)$	(G)	(H)	(I)	(J)	(K)	(L)

**Answer Key:** A, L

**Percentage of Students Answering Correctly:** 31%

**Reporting Category:** Measurement and Coordinate Geometry

**Benchmark:** MA.912.T.1.1

**Benchmark Description:** Define trigonometric ratios for acute angles in right triangles.

## Geometry EOC Test Release Support Document

- 38.** Maria has a circular pizza with a diameter of 12 inches. She cuts the pizza so that each slice has a central angle that measures 90 degrees.

What is the area, in square inches, of each slice of pizza?

$9\pi$												
← → ↶ ↷ ✕												
1	2	3	+	-	•	÷						
4	5	6	<	≤	=	≥	>					
7	8	9	$\square^\square$	$\square_\square$	( )		$\sqrt{\square}$	$\sqrt[\square]{\square}$	$\pi$	$i$		
	0		sin	cos	tan	arcsin	arccos	arctan				
.	-	$\frac{\square}{\square}$										

**Answer Key:**  $9\pi$ , or any value between 28 and 28.3, inclusive

**Percentage of Students Answering Correctly:** 28%

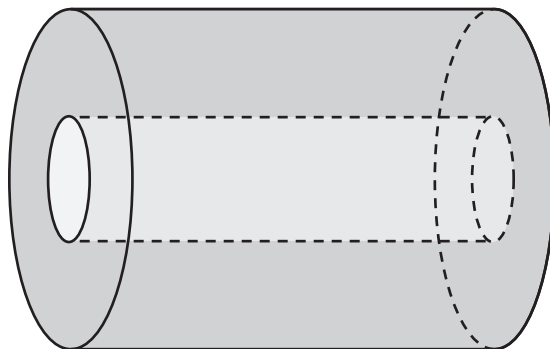
**Reporting Category:** Logic, Relationships, and Theorems

**Benchmark:** MA.912.GR.6.4

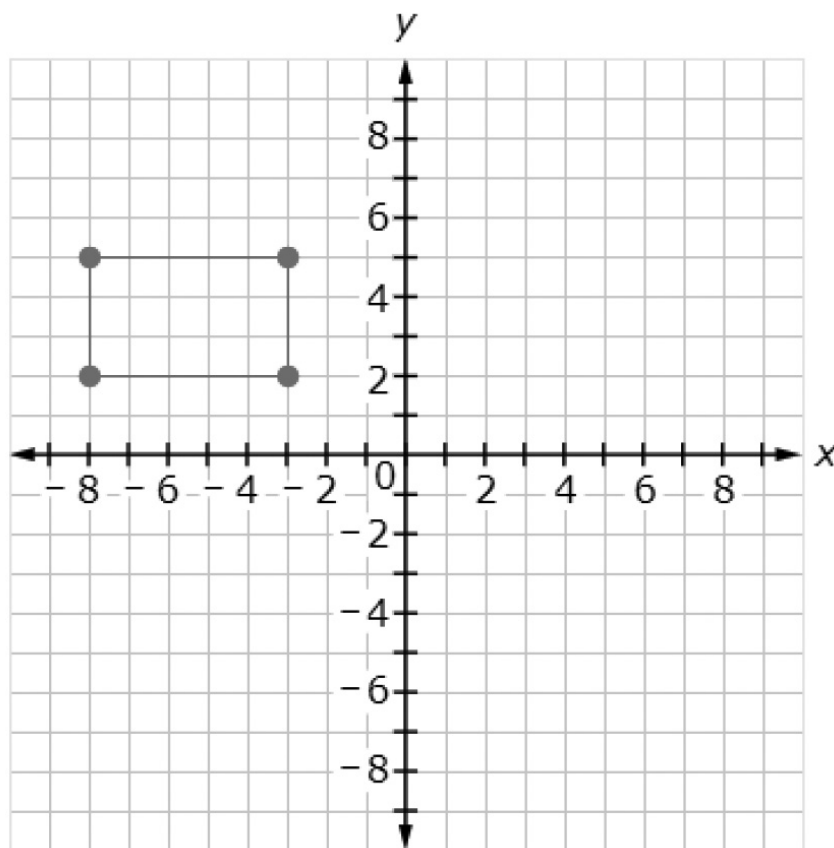
**Benchmark Description:** Solve mathematical and real-world problems involving the arc length and area of a sector in a given circle.

## Geometry EOC Test Release Support Document

39. Karina draws a figure on the coordinate plane. Then, she rotates the figure around the  $x$ -axis. The resulting object is shown.



Use the Connect Line tool to create a possible figure that Karina could have drawn.



## Geometry EOC Test Release Support Document

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**Answer Key:** any rectangle not touching the x-axis

**Percentage of Students Answering Correctly:** 33%

**Reporting Category:** Measurement and Coordinate Geometry

**Benchmark:** MA.912.GR.4.2

**Benchmark Description:** Identify three-dimensional objects generated by rotations of two-dimensional figures.

## Geometry EOC Test Release Support Document

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**40.** The transformations given are performed on pentagon  $ABCDE$  to create pentagon  $A'B'C'D'E'$ .

- $(x, y) \rightarrow (x - 5, y - 6)$
- counterclockwise rotation of  $37^\circ$  about the origin

Complete the sentence to explain whether or not the pentagons are congruent.

Pentagons  $ABCDE$  and  $A'B'C'D'E'$  [A] are [B] are not] congruent because [A] each [B] neither [C] only the first [D] only the second] transformation preserves side lengths and angle measures.

**Answer Key:** A, A

**Percentage of Students Answering Correctly:** 53%

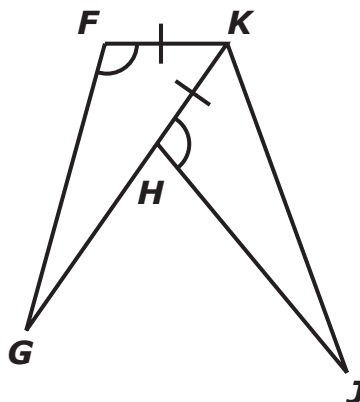
**Reporting Category:** Congruence, Similarity, and Constructions

**Benchmark:** MA.912.GR.2.2

**Benchmark Description:** Identify transformations that do or do not preserve distance.

41. A figure is shown.

- Segment  $KG$  bisects angle  $FKJ$ .
- Angles  $GFK$  and  $JHK$  are congruent.
- Line segments  $FK$  and  $HK$  are congruent.



## Geometry EOC Test Release Support Document

A partial proof is shown.

Statement	Reason
1. $\overline{FK} \cong \overline{HK}$ and $\angle GFK \cong \angle JHK$	1. Given
2. $\overline{KG}$ bisects $\angle FKJ$	2. Given
3.	3. Definition of angle bisector
4. $\triangle GFK \cong \triangle JHK$	4.

What could be Reason 4?

- Ⓐ Side-Angle-Side congruence
- Ⓑ Hypotenuse-Leg congruence
- Ⓒ Angle-Angle-Side congruence
- Ⓓ Angle-Side-Angle congruence

**Answer Key:** D

**Percentage of Students Answering Correctly:** 35%

**Reporting Category:** Logic, Relationships, and Theorems

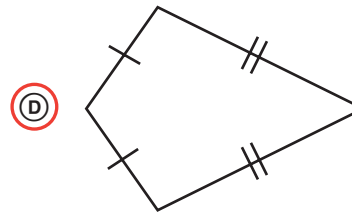
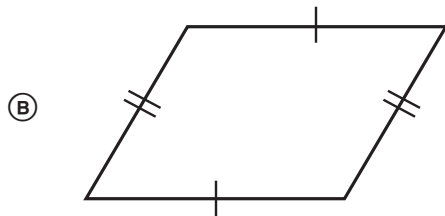
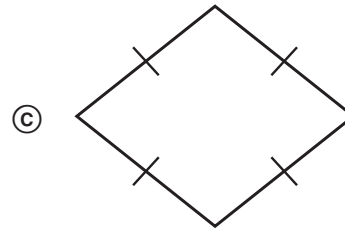
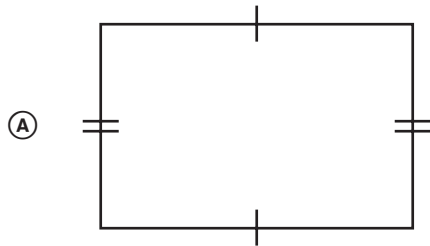
**Benchmark:** MA.912.GR.1.2

**Benchmark Description:** Prove triangle congruence or similarity using Side-Side-Side, Side-Angle-Side, Angle-Side-Angle, Angle-Angle-Side, Angle-Angle and Hypotenuse-Leg.

42. Johanna makes the following claim:

“If a polygon is a quadrilateral, then two pairs of opposite sides are congruent.”

Which polygon is a counterexample to Johanna’s claim?



**Answer Key:** D

**Percentage of Students Answering Correctly:** 40%

**Reporting Category:** Logic, Relationships, and Theorems

**Benchmark:** MA.912.LT.4.10

**Benchmark Description:** Judge the validity of arguments and give counterexamples to disprove statements.

## Geometry EOC Test Release Support Document

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**43.** A sequence of transformations maps triangle  $QRS$  onto congruent triangle  $XYZ$ .

Select all the sequences of transformations that could have mapped triangle  $QRS$  onto triangle  $XYZ$ .

- Ⓐ a reflection across the  $x$ -axis, followed by a  $90^\circ$  clockwise rotation about the origin
- Ⓑ a  $180^\circ$  clockwise rotation about the origin, followed by a reflection across the line  $y = 3$
- Ⓒ a dilation by a scale factor of 3 centered at the origin, followed by a translation 5 units down
- Ⓓ a reflection across the line  $y = x$ , followed by a dilation by a scale factor of  $\frac{1}{3}$  centered at the origin
- Ⓔ a translation 1 unit left and 3 units up, followed by a  $270^\circ$  counterclockwise rotation about the origin

**Answer Key:** A, B, E

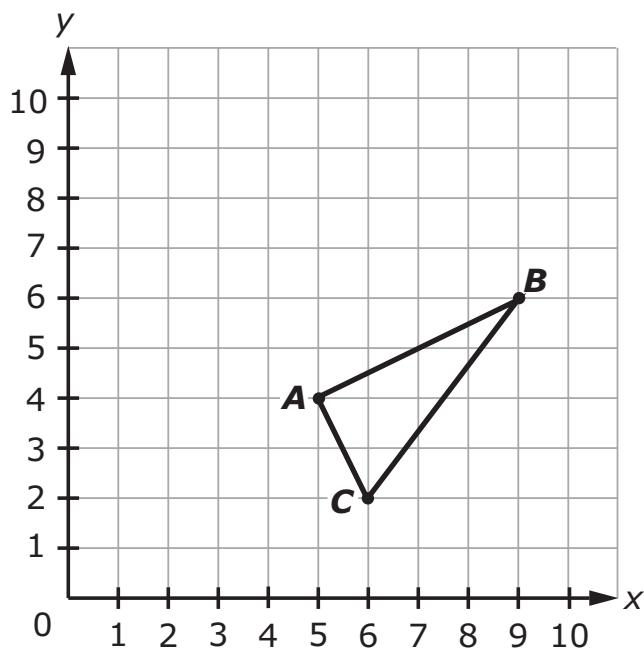
**Percentage of Students Answering Correctly:** 31%

**Reporting Category:** Congruence, Similarity, and Constructions

**Benchmark:** MA.912.GR.2.3

**Benchmark Description:** Identify a sequence of transformations that will map a given figure onto itself or onto another congruent or similar figure.

44. Triangle ABC is shown on the coordinate grid.



## Geometry EOC Test Release Support Document

Complete the steps to describe a sequence of transformations that will map triangle  $ABC$  onto itself.

<b>Step 1</b>	Translate triangle $ABC$ 4 units up.															
<b>Step 2</b>	<p>Translate triangle <math>ABC</math></p> <div style="border: 1px solid gray; padding: 5px; margin-bottom: 5px; text-align: center;"><span style="color: red; font-size: 1.2em;">4</span></div> <div style="border: 1px solid gray; padding: 5px; margin-bottom: 5px;"><div style="display: flex; justify-content: space-around; align-items: center;"><span>←</span><span>→</span><span>↶</span><span>↷</span><span>✕</span></div><table border="1" style="border-collapse: collapse; text-align: center; width: 100%;"><tbody><tr><td style="width: 33px; height: 33px;">1</td><td style="width: 33px; height: 33px;">2</td><td style="width: 33px; height: 33px;">3</td></tr><tr><td style="width: 33px; height: 33px;">4</td><td style="width: 33px; height: 33px;">5</td><td style="width: 33px; height: 33px;">6</td></tr><tr><td style="width: 33px; height: 33px;">7</td><td style="width: 33px; height: 33px;">8</td><td style="width: 33px; height: 33px;">9</td></tr><tr><td style="width: 33px; height: 33px;"></td><td style="width: 33px; height: 33px;">0</td><td style="width: 33px; height: 33px;"></td></tr><tr><td style="width: 33px; height: 33px;">.</td><td style="width: 33px; height: 33px;">-</td><td style="width: 33px; height: 33px;"><math>\frac{\square}{\square}</math></td></tr></tbody></table></div> <p>units down.</p>	1	2	3	4	5	6	7	8	9		0		.	-	$\frac{\square}{\square}$
1	2	3														
4	5	6														
7	8	9														
	0															
.	-	$\frac{\square}{\square}$														
<b>Step 3</b>	<p>Dilate triangle <math>ABC</math> by a scale factor of</p> <div style="border: 1px solid gray; padding: 5px; margin-bottom: 5px; text-align: center;"><span style="color: red; font-size: 1.2em;">1</span></div> <div style="border: 1px solid gray; padding: 5px; margin-bottom: 5px;"><div style="display: flex; justify-content: space-around; align-items: center;"><span>←</span><span>→</span><span>↶</span><span>↷</span><span>✕</span></div><table border="1" style="border-collapse: collapse; text-align: center; width: 100%;"><tbody><tr><td style="width: 33px; height: 33px;">1</td><td style="width: 33px; height: 33px;">2</td><td style="width: 33px; height: 33px;">3</td></tr><tr><td style="width: 33px; height: 33px;">4</td><td style="width: 33px; height: 33px;">5</td><td style="width: 33px; height: 33px;">6</td></tr><tr><td style="width: 33px; height: 33px;">7</td><td style="width: 33px; height: 33px;">8</td><td style="width: 33px; height: 33px;">9</td></tr><tr><td style="width: 33px; height: 33px;"></td><td style="width: 33px; height: 33px;">0</td><td style="width: 33px; height: 33px;"></td></tr><tr><td style="width: 33px; height: 33px;">.</td><td style="width: 33px; height: 33px;">-</td><td style="width: 33px; height: 33px;"><math>\frac{\square}{\square}</math></td></tr></tbody></table></div> <p>centered at the origin.</p>	1	2	3	4	5	6	7	8	9		0		.	-	$\frac{\square}{\square}$
1	2	3														
4	5	6														
7	8	9														
	0															
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## Geometry EOC Test Release Support Document

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**Answer Key:** 4, 1, or any equivalent values

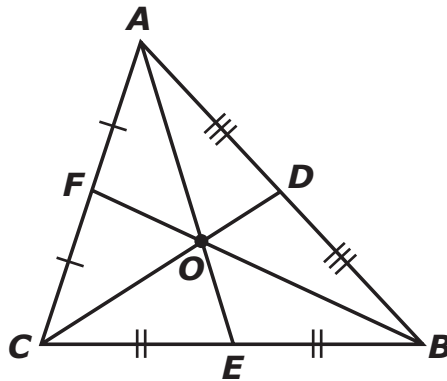
**Percentage of Students Answering Correctly:** 26%

**Reporting Category:** Congruence, Similarity, and Constructions

**Benchmark:** MA.912.GR.2.3

**Benchmark Description:** Identify a sequence of transformations that will map a given figure onto itself or onto another congruent or similar figure.

45. A figure is shown.



Complete the statement to describe  $\triangle ABC$ .

The [ A] medians [ B] angle bisectors [ C] perpendicular bisectors] of  $\triangle ABC$  meet at point [ A] C. [ B] D. [ C] O.]

**Answer Key:** A, C

**Percentage of Students Answering Correctly:** 26%

**Reporting Category:** Logic, Relationships, and Theorems

**Benchmark:** MA.912.GR.1.3

**Benchmark Description:** Prove relationships and theorems about triangles. Solve mathematical and real-world problems involving postulates, relationships and theorems of triangles.



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