

Example Items

Geometry Pre-AP

Geometry Pre-AP Example Items are a **representative set** of items for the ACP. Teachers may use this set of items along with the test blueprint as guides to prepare students for the ACP. On the last page, the correct answer, content SE and SE justification are listed for each item.

*The specific part of an SE that an Example Item measures is **NOT** necessarily the only part of the SE that is assessed on the ACP.* None of these Example Items will appear on the ACP.

Teachers may provide feedback regarding Example Items.

(1) Download the [Example Feedback Form](#) and email it. The form is located on the homepage of Assessment.dallasisd.org.

OR

(2) To submit directly, click “Example Feedback” **after** you login to the [Assessment website](#).

First Semester

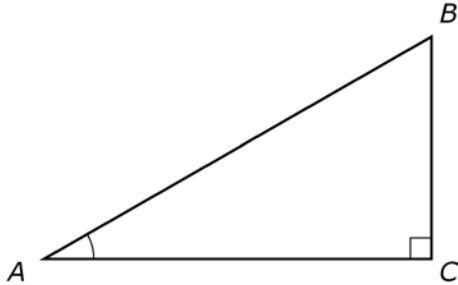
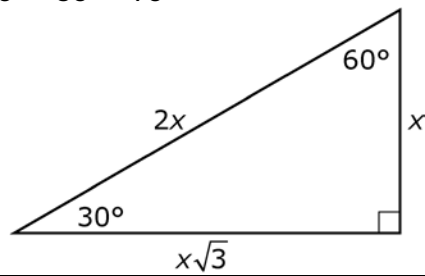
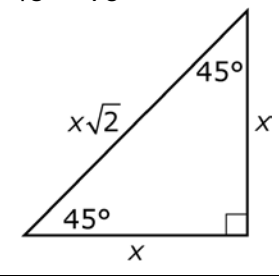
2018–2019

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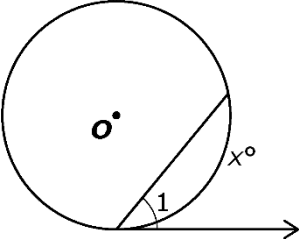
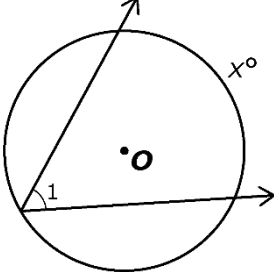
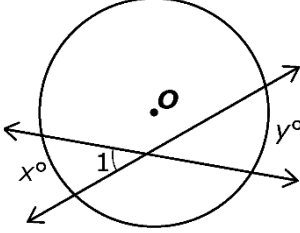
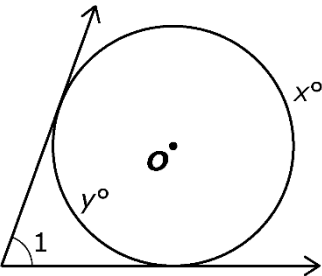
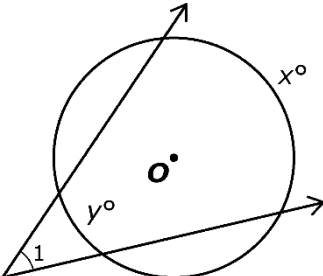
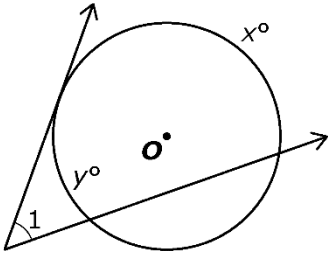
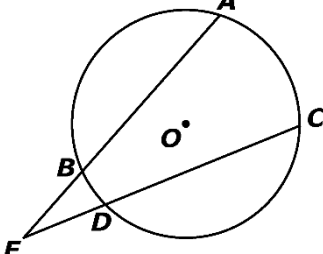
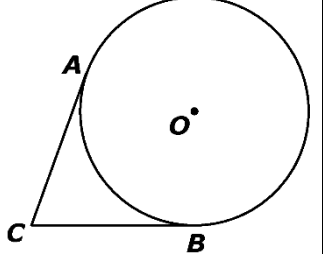
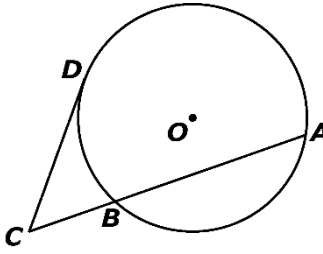
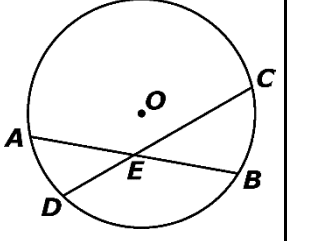
ACD Formulas
Geometry/Geometry PAP
2018-2019

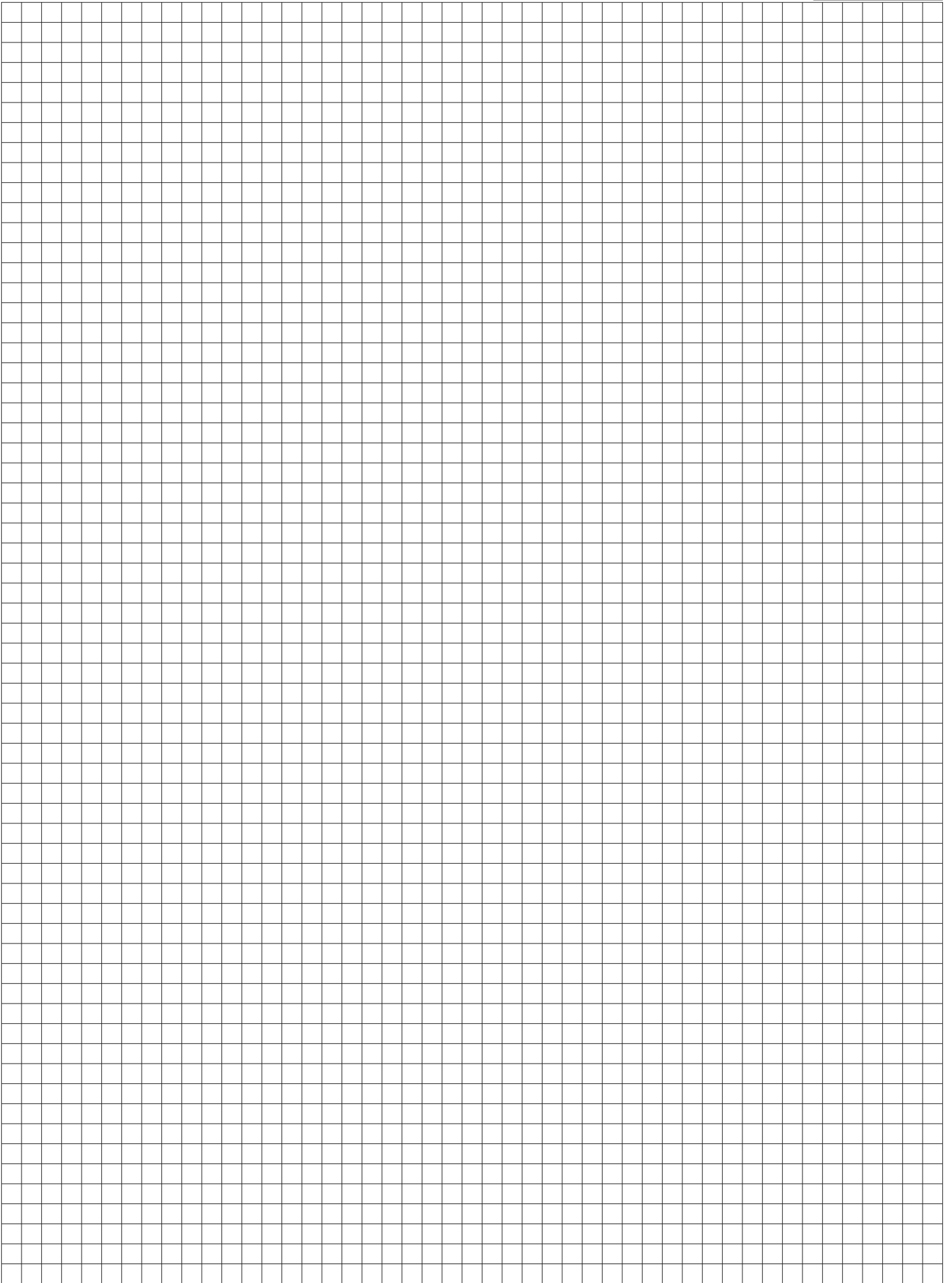
Perimeter and Circumference			
Square:	$P = 4s$	Rectangle:	$P = 2\ell + 2w$
Circle:	$C = 2\pi r$ $C = \pi d$	Arc Length:	$\ell = \frac{x}{360^\circ} \cdot 2\pi r$
Area			
Square:	$A = s^2$	Triangle:	$A = \frac{1}{2}bh$
Rectangle:	$A = \ell w$ $A = bh$	Regular Polygon:	$A = \frac{1}{2}aP$
Parallelogram:	$A = bh$	Circle:	$A = \pi r^2$
Rhombus:	$A = \frac{1}{2}d_1d_2$ $A = bh$	Sector of a Circle:	$A = \frac{x}{360^\circ} \cdot \pi r^2$
Trapezoid:	$A = \frac{1}{2}(b_1 + b_2)h$		
Lateral Surface Area			
Prism:	$L = Ph$	Pyramid:	$L = \frac{1}{2}P\ell$
Cylinder:	$L = 2\pi rh$	Cone:	$L = \pi r\ell$
Total Surface Area			
Prism:	$S = Ph + 2B$	Pyramid:	$S = \frac{1}{2}P\ell + B$
Cylinder:	$S = 2\pi rh + 2\pi r^2$	Cone:	$S = \pi r\ell + \pi r^2$
Sphere:	$S = 4\pi r^2$	Area of a Sector:	$A = \frac{x}{360^\circ} \cdot \pi r^2$
Volume			
Rectangular Prism:	$V = \ell wh$	Cube:	$V = s^3$
Prism:	$V = Bh$	Pyramid:	$V = \frac{1}{3}Bh$
Cylinder:	$V = \pi r^2 h$ $V = Bh$	Cone:	$V = \frac{1}{3}Bh$ $V = \frac{1}{3}\pi r^2 h$
Sphere:	$V = \frac{4}{3}\pi r^3$		
Polygons			
Interior Angle Sum:	$S = 180(n - 2)$	Measure of Exterior Angle of a Regular Polygon:	$\frac{360^\circ}{n}$

ACD Formulas
Geometry/Geometry PAP
2018-2019

Coordinate Geometry	
Midpoint:	$M = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$
Distance:	$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$
Slope of a Line:	$m = \frac{y_2 - y_1}{x_2 - x_1}$
Slope-Intercept Form of a Line:	$y = mx + b$
Point-Slope Form of a Line:	$y - y_1 = m(x - x_1)$
Standard Form of a Line:	$Ax + By = C$
Equation of a Circle:	$(x - h)^2 + (y - k)^2 = r^2$
Trigonometry	
Pythagorean Theorem:	$a^2 + b^2 = c^2$
Trigonometric Ratios:	$\sin A = \frac{\text{opposite leg}}{\text{hypotenuse}}$ $\cos A = \frac{\text{adjacent leg}}{\text{hypotenuse}}$ $\tan A = \frac{\text{opposite leg}}{\text{adjacent leg}}$
	
Special Right Triangles:	<div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p>30° - 60° - 90°</p>  </div> <div style="text-align: center;"> <p>45° - 45° - 90°</p>  </div> </div>
Law of Sines:	$\frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}$
Law of Cosines:	$a^2 = b^2 + c^2 - 2bc \cos A$ $b^2 = a^2 + c^2 - 2ac \cos B$ $c^2 = a^2 + b^2 - 2ab \cos C$
Probability	
Permutations:	${}_n P_r = \frac{n!}{(n-r)!}$
Combinations:	${}_n C_r = \frac{n!}{(n-r)!r!}$

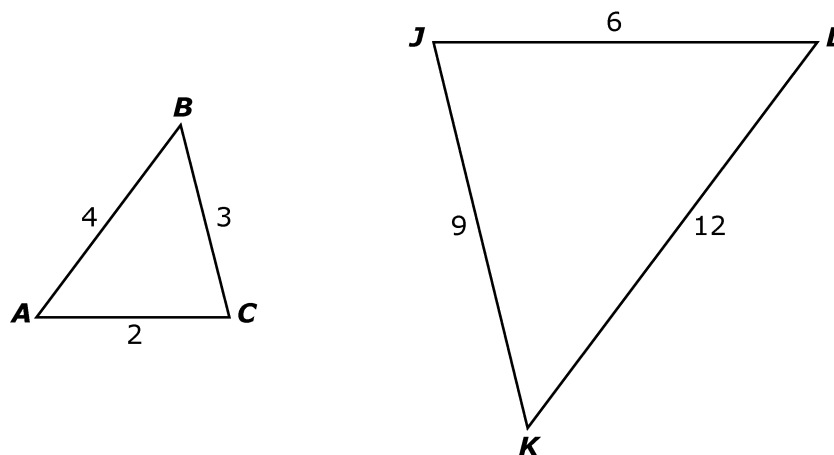
ACD Formulas
 Geometry/Geometry PAP
 2018-2019

Circles			
ANGLES Created by Chords, Secants, and Tangents			
Vertex ON the Circle		Vertex INSIDE the Circle	
			
$m\angle 1 = \frac{1}{2}x$		$m\angle 1 = \frac{1}{2}(x + y)$	
Vertex OUTSIDE the Circle			
			
$m\angle 1 = \frac{1}{2}(x - y)$			
SEGMENTS Created by Chords, Secants, and Tangents			
			
$AE \cdot BE = CE \cdot DE$	$AC = BC$	$AC \cdot BC = DC^2$	$AE \cdot EB = CE \cdot ED$



EXAMPLE ITEMS Geometry Pre-AP, Sem 1

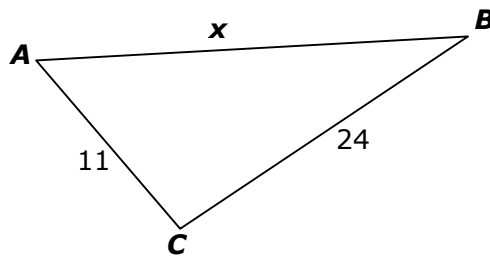
- 1 Two triangles are shown.



Based on the information in the diagram, which statement is true?

- A** $\triangle ABC \sim \triangle LKJ$, therefore $\overline{AB} \sim \overline{LK}$ and $\overline{AC} \sim \overline{LJ}$.
- B** $\triangle ABC \sim \triangle JKL$, therefore $\overline{AB} \sim \overline{LK}$ and $\overline{AC} \sim \overline{LJ}$.
- C** $\triangle ABC \sim \triangle JLK$, therefore $\overline{AB} \sim \overline{JL}$ and $\overline{AC} \sim \overline{JK}$.
- D** $\triangle ABC \sim \triangle LJK$, therefore $\overline{AB} \sim \overline{AC}$ and $\overline{LK} \sim \overline{LJ}$.

- 2 In $\triangle ABC$, $AC = 11$ and $BC = 24$.



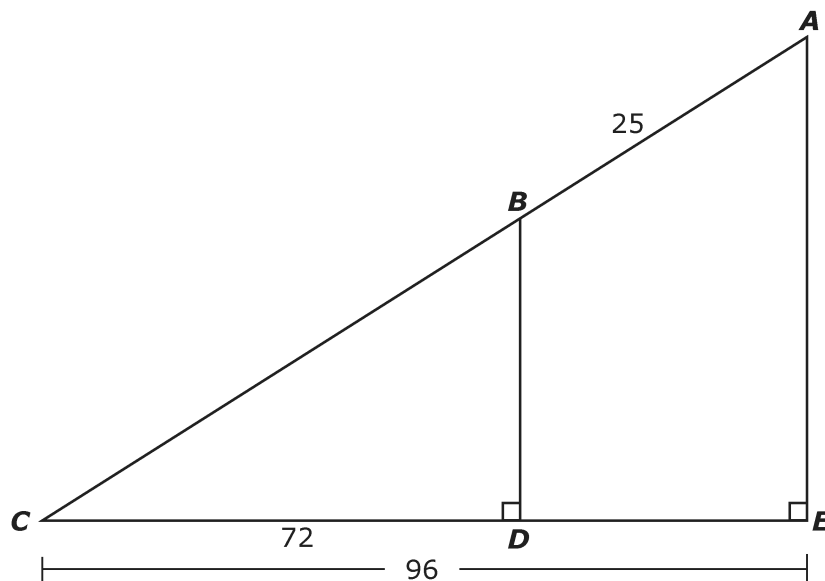
Which inequality describes all possible lengths of \overline{AB} ?

- A** $11 < x < 24$
- B** $11 \leq x \leq 24$
- C** $13 < x < 35$
- D** $13 \leq x \leq 35$

EXAMPLE ITEMS Geometry Pre-AP, Sem 1

3

Triangle ACE is shown.



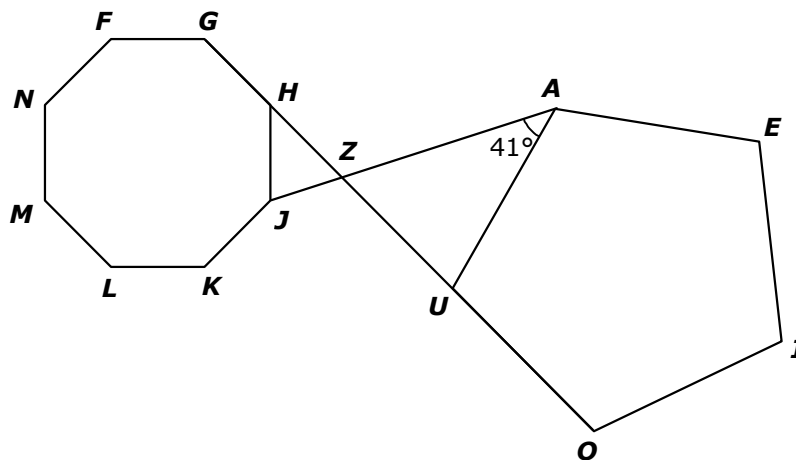
Based on the information in the diagram, what is the perimeter of $\triangle ACE$?

+	0	0	0	0	0	0	0	0
-	0	0	0	0	0	0	0	0
	1	1	1	1	1	1	1	1
	2	2	2	2	2	2	2	2
	3	3	3	3	3	3	3	3
	4	4	4	4	4	4	4	4
	5	5	5	5	5	5	5	5
	6	6	6	6	6	6	6	6
	7	7	7	7	7	7	7	7
	8	8	8	8	8	8	8	8
	9	9	9	9	9	9	9	9

Record the answer and fill in the bubbles on the grid provided. Be sure to use the correct place value.

EXAMPLE ITEMS Geometry Pre-AP, Sem 1

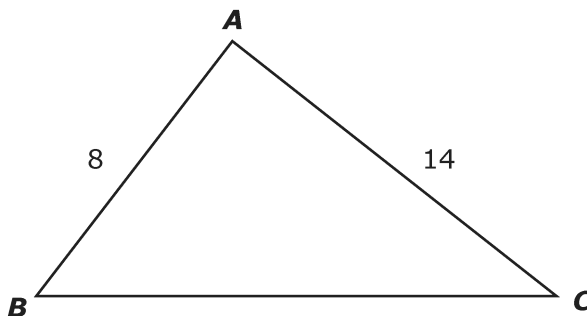
- 4 In the figure shown, octagon $FGHJKLMN$ and pentagon $AEIOU$ are both regular polygons, $m\angle ZAU = 41^\circ$, and \overline{GO} is a straight line.



What is $m\angle HJZ$?

- A 72°
- B 69.5°
- C 68°
- D 45°

- 5 Triangle ABC is given.

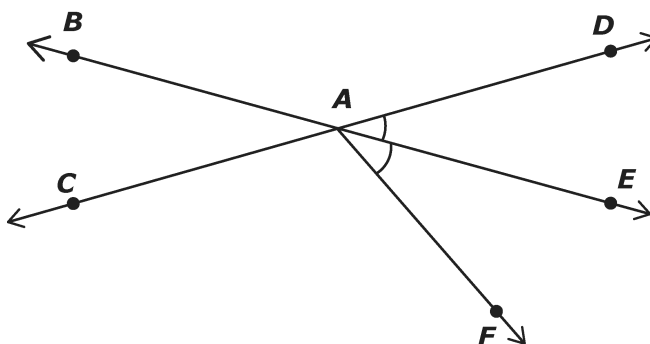


What is a possible length for \overline{BC} ?

- A 6
- B 20
- C 22
- D 25

EXAMPLE ITEMS Geometry Pre-AP, Sem 1

6 In the diagram, $\angle EAD \cong \angle EAF$, $m\angle DAB = (6x + 14)^\circ$ and $m\angle BAC = (4x + 6)^\circ$.



Based on the information in the diagram, what is the measure of $\angle EAF$?

+	0	0	0	0	0	0	0	0
-	1	1	1	1	1	1	1	1
	2	2	2	2	2	2	2	2
	3	3	3	3	3	3	3	3
	4	4	4	4	4	4	4	4
	5	5	5	5	5	5	5	5
	6	6	6	6	6	6	6	6
	7	7	7	7	7	7	7	7
	8	8	8	8	8	8	8	8
	9	9	9	9	9	9	9	9

Record the answer and fill in the bubbles on the grid provided. Be sure to use the correct place value.

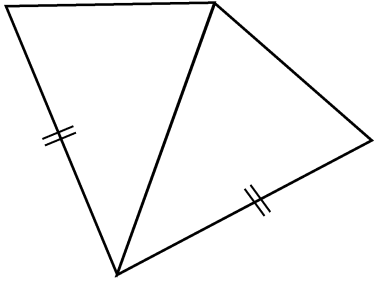
7 Which equation describes a line that passes through $(-5, -8)$ and is perpendicular to $y = \frac{5}{4}x + 10$?

- A $y = -0.8x - 12$
- B $y = -1.25x - 14.25$
- C $y = 1.25x - 1.75$
- D $y = -0.8x + 3$

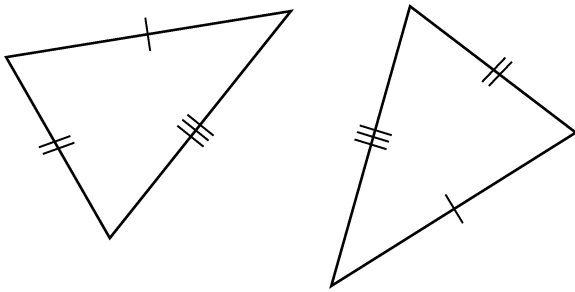
EXAMPLE ITEMS Geometry Pre-AP, Sem 1

- 8 Which diagram contains a pair of triangles that are congruent by the Side-Angle-Side congruence theorem?

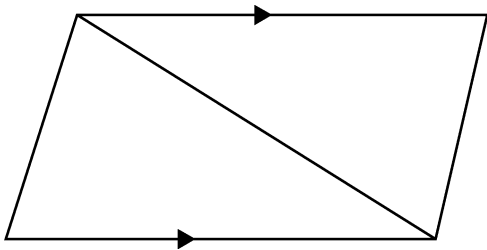
A



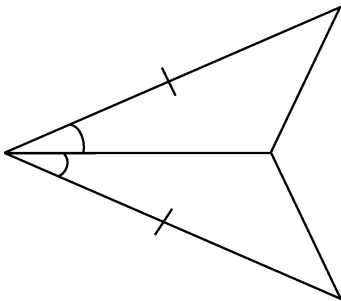
B



C

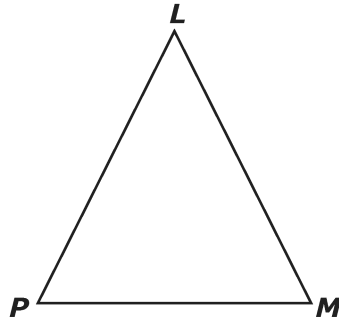


D



EXAMPLE ITEMS Geometry Pre-AP, Sem 1

- 9 $\triangle PLM$ is an isosceles triangle with $\overline{LP} \cong \overline{LM}$, $m\angle L = (4x)^\circ$, and $m\angle P = (3x + 20)^\circ$.



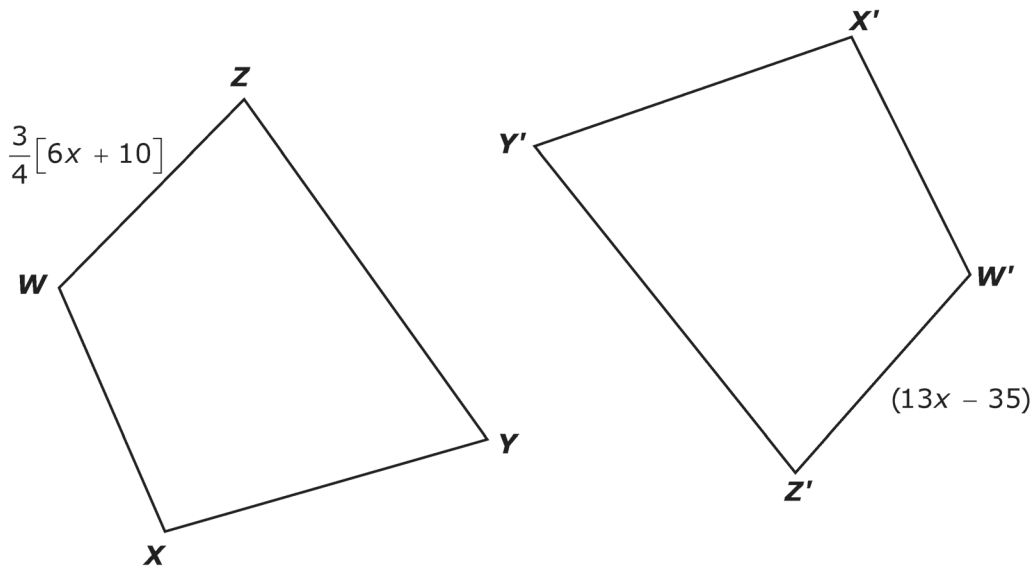
Based on this information, what is the measure of $\angle M$ in degrees?

+	•	•	•	•	•	•	•
-	0	0	0	0	0	0	0
	1	1	1	1	1	1	1
	2	2	2	2	2	2	2
	3	3	3	3	3	3	3
	4	4	4	4	4	4	4
	5	5	5	5	5	5	5
	6	6	6	6	6	6	6
	7	7	7	7	7	7	7
	8	8	8	8	8	8	8
	9	9	9	9	9	9	9

Record the answer and fill in the bubbles on the grid provided. Be sure to use the correct place value.

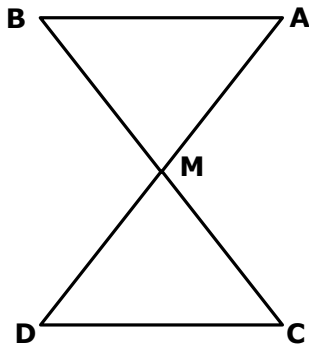
EXAMPLE ITEMS Geometry Pre-AP, Sem 1

- 10 In the diagram, quadrilateral $WXYZ$ is rotated to create quadrilateral $W'X'Y'Z'$.



Based on the information in the diagram, what is the length of \overline{WZ} ?

- A 3
 - B 5
 - C 30
 - D 40
- 11 In the figure, M is the midpoint of \overline{AD} and \overline{BC} .

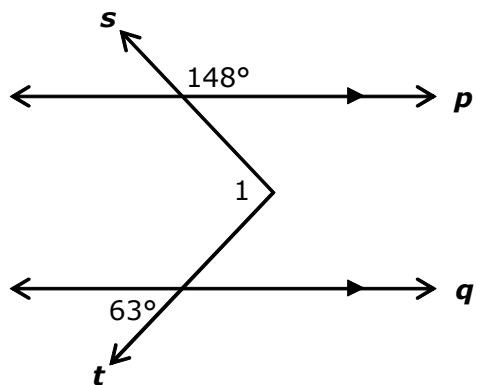


Based on this information, which triangle congruence relationship proves $\triangle ABM \cong \triangle DCM$?

- A ASA (Angle–Side–Angle)
- B SAS (Side–Angle–Side)
- C SSA (Side–Side–Angle)
- D SSS (Side–Side–Side)

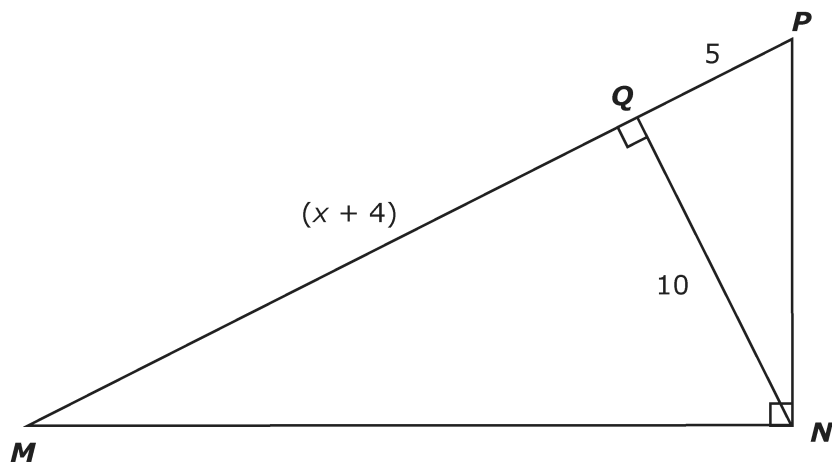
EXAMPLE ITEMS Geometry Pre-AP, Sem 1

- 12 The lines and rays in the figure are coplanar. Line p is parallel to line q .



Based on the information in the diagram, what is $m\angle 1$?

- A 64°
 - B 85°
 - C 95°
 - D 211°
- 13 Triangle MNP is shown.

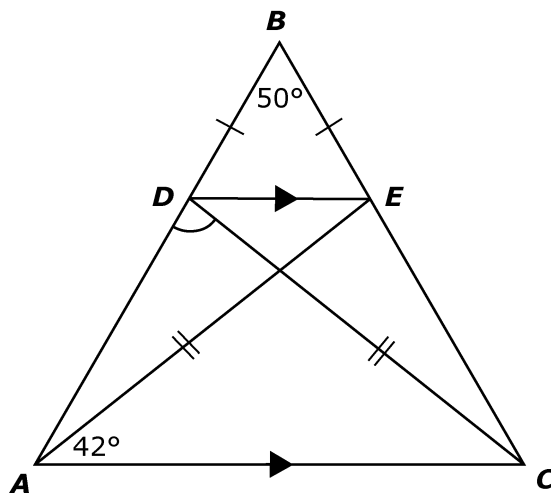


Based on the information in the diagram, what is the area of $\triangle MNP$?

- A 75
- B 100
- C 105
- D 125

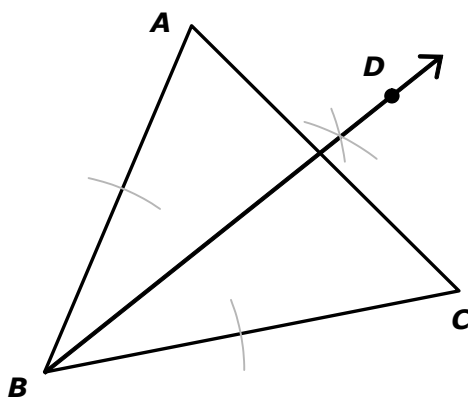
EXAMPLE ITEMS Geometry Pre-AP, Sem 1

- 14 In $\triangle ABC$, $\overline{DE} \parallel \overline{AC}$.



Based on the information in the diagram, what is the measure of $\angle ADC$?

- A 65°
 - B 73°
 - C 88°
 - D 96°
- 15 The diagram shows the arcs used to construct \overrightarrow{BD} , given $\triangle ABC$.



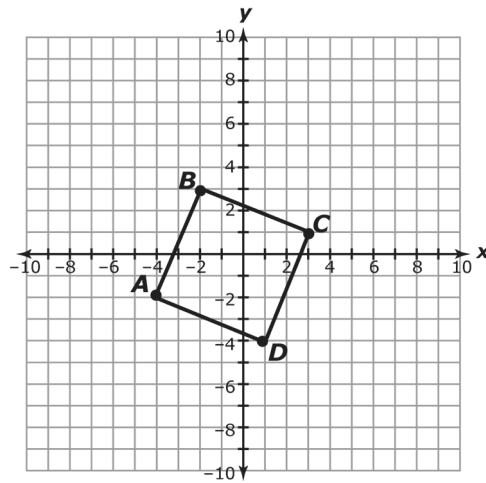
If $m\angle ABC = 84^\circ$ and $m\angle CBD = (x^2 + 6)^\circ$, what is the value of x ?

- A 6
- B 18
- C 36
- D 42

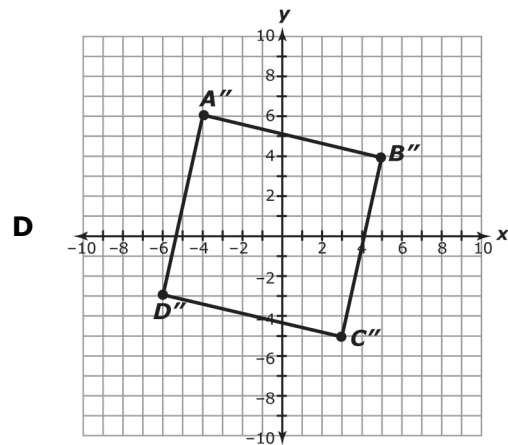
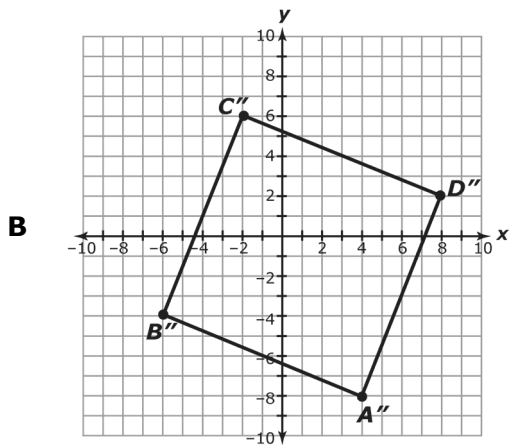
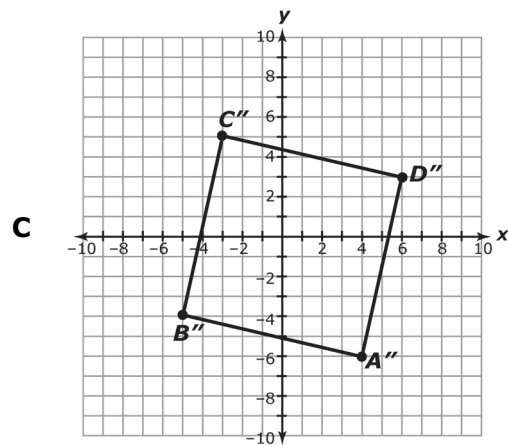
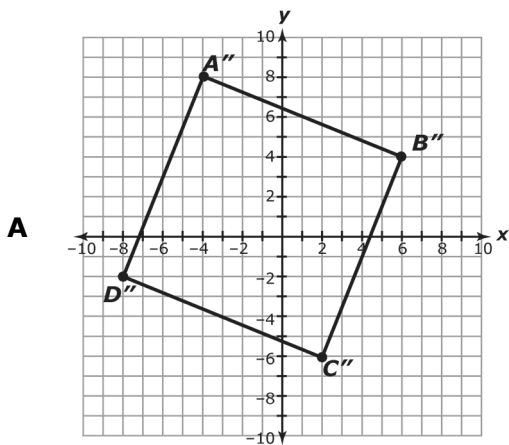
EXAMPLE ITEMS Geometry Pre-AP, Sem 1

16

Quadrilateral $ABCD$ is shown on the coordinate grid.

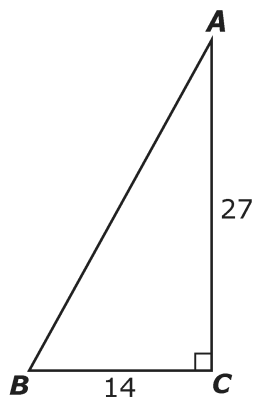


If quadrilateral $ABCD$ is rotated 90° clockwise about the origin and then dilated by a scale factor of 2 with the origin as the center of dilation, which graph represents quadrilateral $A''B''C''D''$?



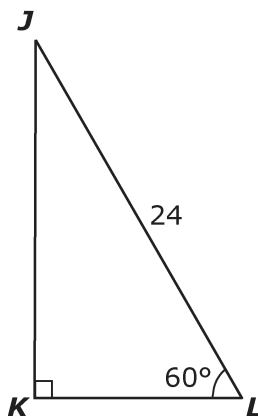
EXAMPLE ITEMS Geometry Pre-AP, Sem 1

- 17 Triangle ABC is shown.



Based on the information in the diagram, what is the approximate measure of $\angle B$?

- A 27.4°
 - B 30.4°
 - C 58.8°
 - D 62.6°
- 18 Triangle JKL is shown.



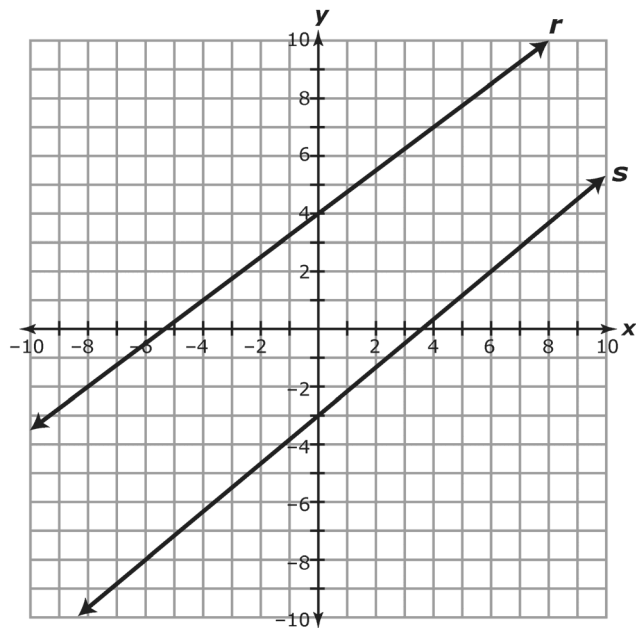
Based on the information in the diagram, what is the length of \overline{JK} ?

- A 8
- B $8\sqrt{3}$
- C 12
- D $12\sqrt{3}$

EXAMPLE ITEMS Geometry Pre-AP, Sem 1

19

Lines r and s are graphed on a coordinate grid as shown.



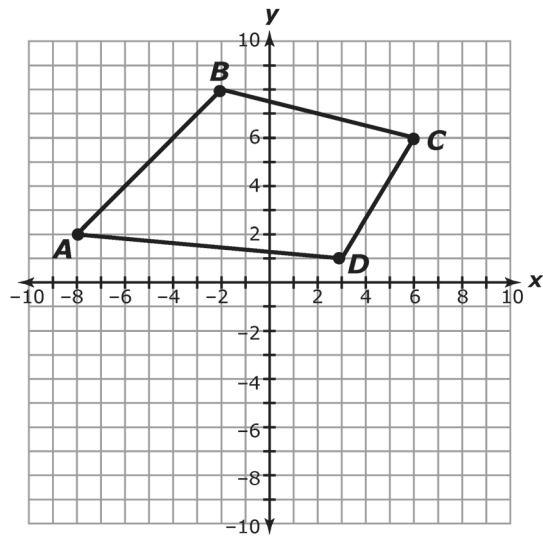
Based on the information in the graph, which statement is true?

- A Lines r and s are parallel lines.
- B Lines r and s are perpendicular lines.
- C Lines r and s never intersect.
- D Lines r and s are neither parallel nor perpendicular.

EXAMPLE ITEMS Geometry Pre-AP, Sem 1

20

Quadrilateral $ABCD$ is shown on the coordinate grid.



If quadrilateral $ABCD$ is reflected across the line $y = x$, what is the coordinate of the point B' ?

- A (8, -2)
- B (2, 8)
- C (-2, -8)
- D (-8, 2)

EXAMPLE ITEMS Geometry Pre-AP Key, Sem 1

Item#	Key	SE	SE Justification
1	A	G.7A	Apply the definition of similarity in terms of a dilation to identify similar figures.
2	C	G.5D	Apply the Triangle Inequality Theorem to solve problems.
3	224	G.8A	Apply theorems about similar triangles to solve problems.
4	C	G.5A	Investigate patterns to make conjectures about geometric relationships, including interior angles of polygons.
5	B	G.5D	Apply the Triangle inequality theorem to solve problems.
6	70	G.6A	Apply theorems about angles formed by the intersection of lines and line segments, including vertical angles, to solve problems.
7	A	G.2C	Determine an equation of a line perpendicular to a given line that passes through a given point.
8	D	G.6B	Prove two triangles are congruent by applying the Side-Angle-Side congruence.
9	62	G.6D	Apply theorems about the relationships in triangles to solve problems.
10	C	G.6C	Apply the definition of congruence, in terms of rigid transformations.
11	B	G.6B	Prove two triangles are congruent by applying the Side-Angle-Side congruence conditions.
12	C	G.6A	Apply theorems about angles formed by parallel lines cut by a transversal to solve problems.
13	D	G.8B	Apply the relationships that exist when an altitude is drawn to the hypotenuse of a right triangle, including the geometric mean, to solve problems.
14	B	G.6D	Apply theorems about the relationships in triangles, including base angles of isosceles triangles, to solve problems.
15	A	G.5C	Use the constructions of angle bisectors to make conjectures about geometric relationships.
16	A	G.3B	Determine the image of a given two-dimensional figure under a composition of both rigid and non-rigid transformation.
17	D	G.9A	Determine the lengths of sides and measures of angles in a right triangle by applying the trigonometric ratio to solve problems.
18	D	G.9B	Apply the relationships in special right triangles 30° - 60° - 90° to solve problems.
19	D	G.2B	Use the slope formulas to verify geometric relationships parallelism or perpendicularity of pairs of lines.
20	A	G.3A	Perform transformations of figures in a plane using coordinate notation.