

Example Items

Geometry

Geometry 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

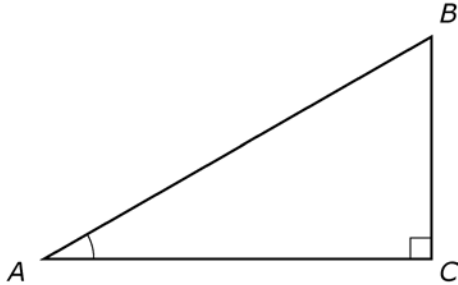
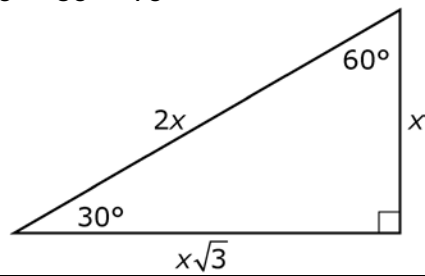
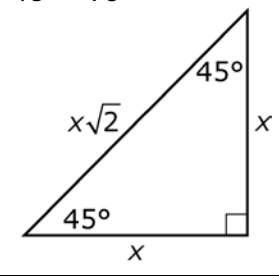
2018–2019

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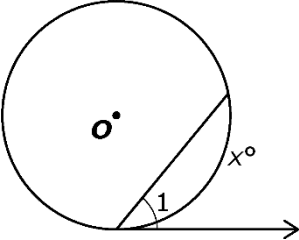
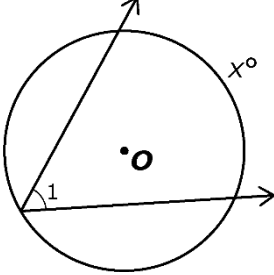
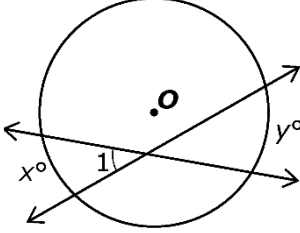
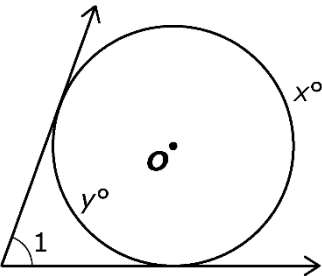
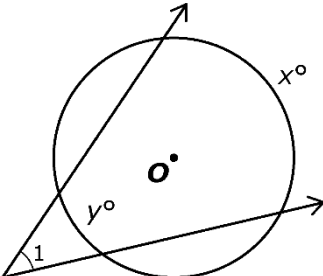
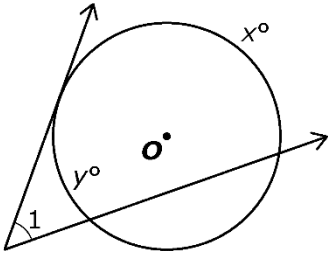
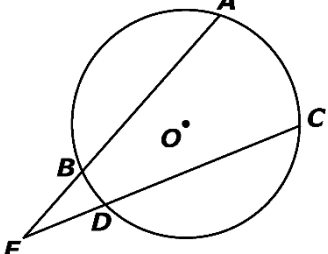
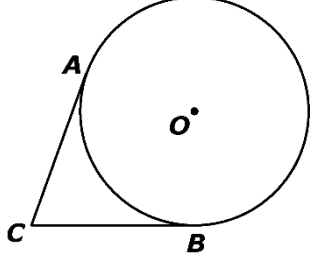
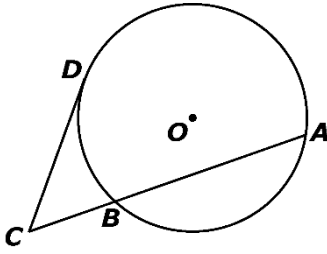
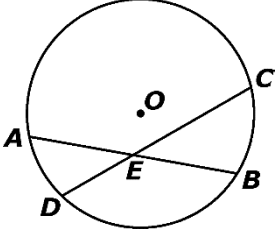
ACD Formulas
Geometry/Geometry PAP
2018-2019

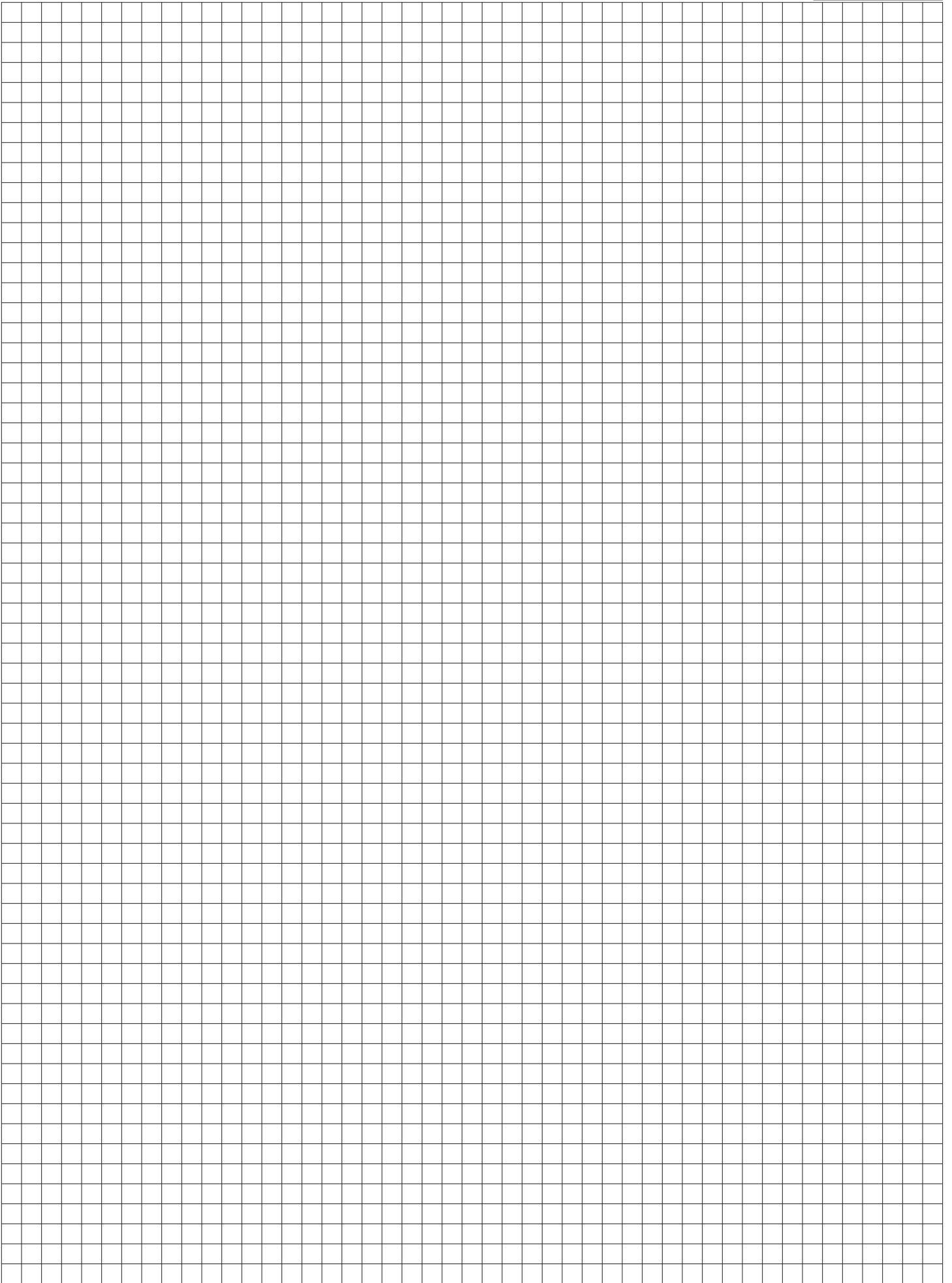
Perimeter and Circumference			
Square:	$P = 4s$	Rectangle:	$P = 2\ell + 2w$
Circle:	$C = 2\pi r$ $C = \pi d$	Arc Length:	$\ell = \frac{x}{360^\circ} \cdot 2\pi r$
Area			
Square:	$A = s^2$	Triangle:	$A = \frac{1}{2}bh$
Rectangle:	$A = \ell w$ $A = bh$	Regular Polygon:	$A = \frac{1}{2}aP$
Parallelogram:	$A = bh$	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:	${}_n C_r = \frac{n!}{(n-r)!r!}$

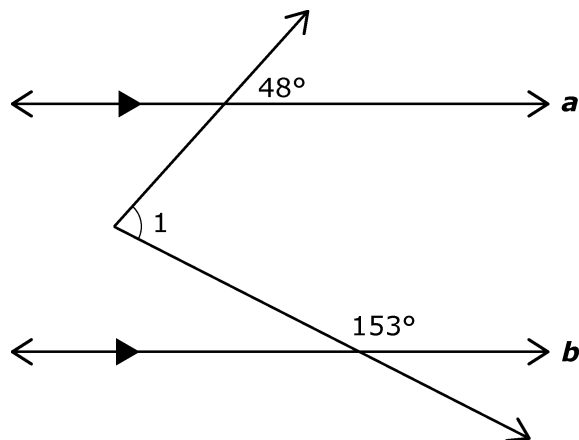
ACD Formulas
 Geometry/Geometry PAP
 2018-2019

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, Sem 1

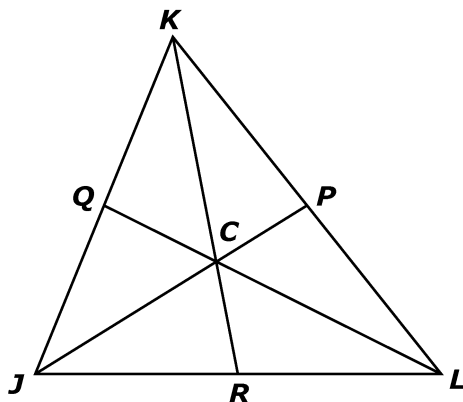
- 1 In the diagram, $a \parallel b$.



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

- A 48°
- B 75°
- C 153°
- D 201°

- 2 In $\triangle JKL$, C is the centroid and $\overline{QC} = 4$.



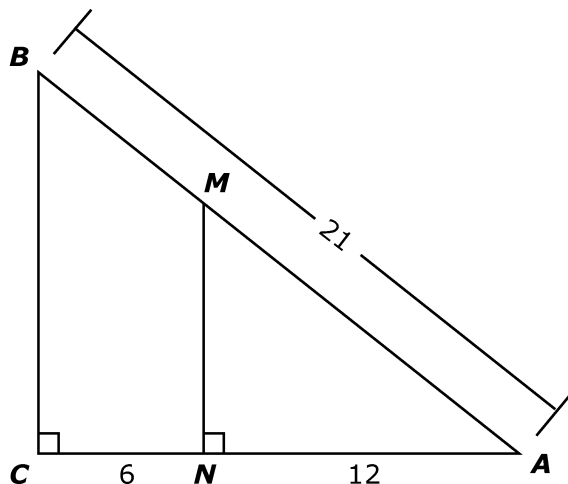
What is the length of \overline{QL} ?

- A 6
- B 8
- C 12
- D 32

EXAMPLE ITEMS Geometry, Sem 1

3

Triangle ABC is shown.



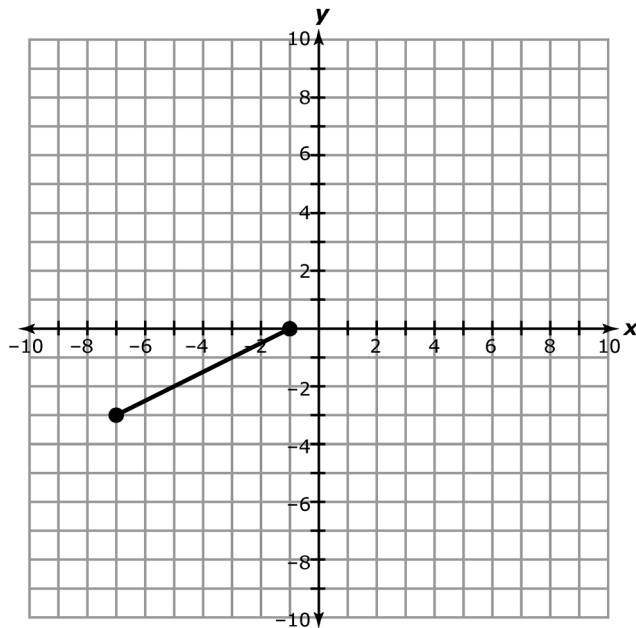
Based on the information in the diagram, what is the length of \overline{BM} ?

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

+	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

EXAMPLE ITEMS Geometry, Sem 1

- 4 \overline{CT} has a midpoint at $(-1, 0)$.

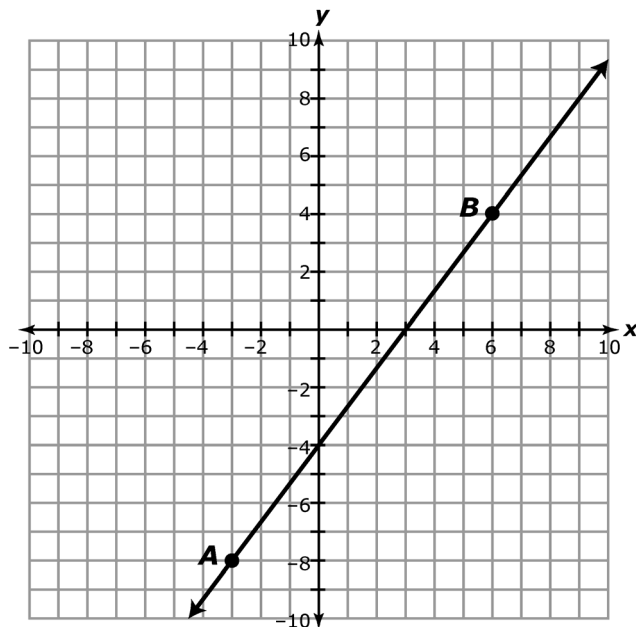


If C is located at $(-7, -3)$, what is the location of point T ?

- A $(-13, -6)$
- B $(-4, -1.5)$
- C $(2, 1.5)$
- D $(5, 3)$

EXAMPLE ITEMS Geometry, Sem 1

- 5 The graph of \overleftrightarrow{AB} is shown.

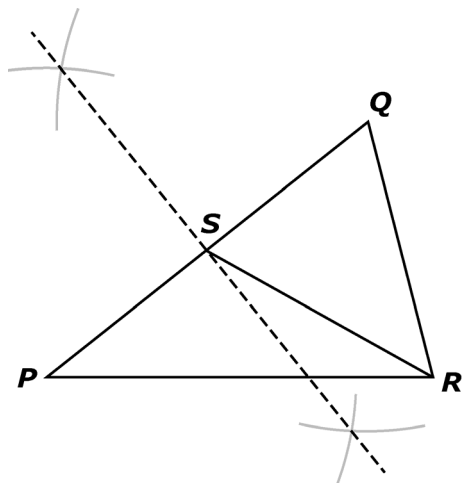


Which equation represents a line parallel to \overleftrightarrow{AB} that passes through the point (0, 4)?

- A** $y = \frac{3}{4}x + 4$
- B** $y = \frac{4}{3}x + 4$
- C** $y = \frac{-4}{3}x + 4$
- D** $y = \frac{-3}{4}x + 4$

EXAMPLE ITEMS Geometry, Sem 1

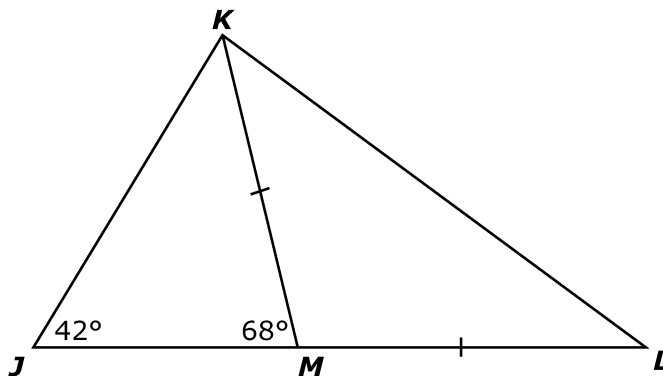
- 6 The diagram shows the arcs and segments used to construct \overline{SR} , given $\triangle PQR$.



Based on this construction, which term describes \overline{SR} ?

- A Median
- B Altitude
- C Angle bisector
- D Perpendicular bisector

- 7 Triangle JKL is shown.



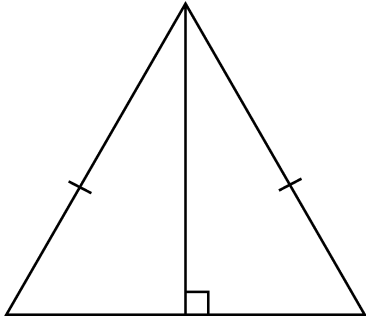
Based on the information in the diagram, what is the measure of $\angle JKL$?

- A 87°
- B 96°
- C 104°
- D 138°

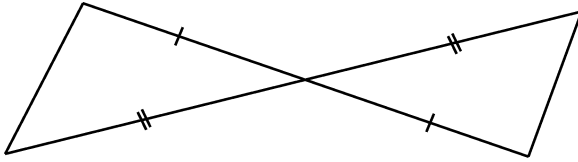
EXAMPLE ITEMS Geometry, Sem 1

8 Which diagram shows two triangles that are congruent by the Side-Angle-Side theorem?

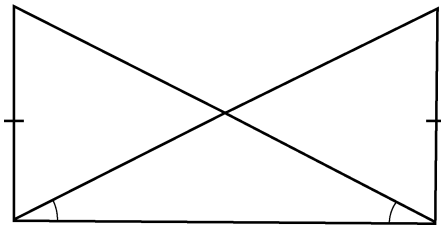
A



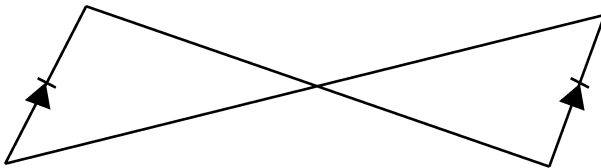
B



C

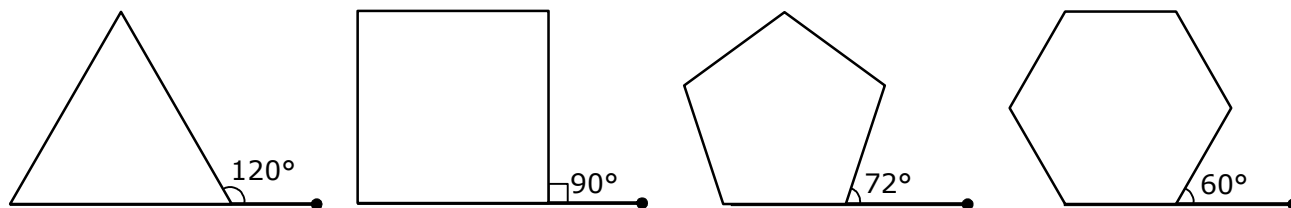


D



EXAMPLE ITEMS Geometry, Sem 1

9 The figures shown are regular polygons.



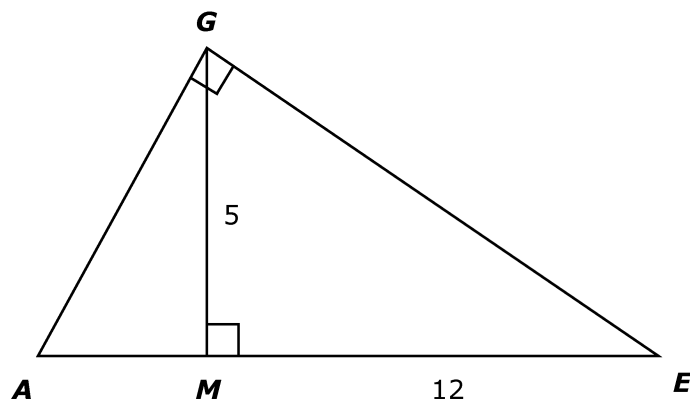
There is a pattern formed by the number of sides in the polygon and the measure of each exterior angle of the polygon. If this pattern continues, what is the measure of each exterior angle, in degrees, of a regular polygon with 40 sides?

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

+	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
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	8	8	8	8	8	8	8	8
	9	9	9	9	9	9	9	9

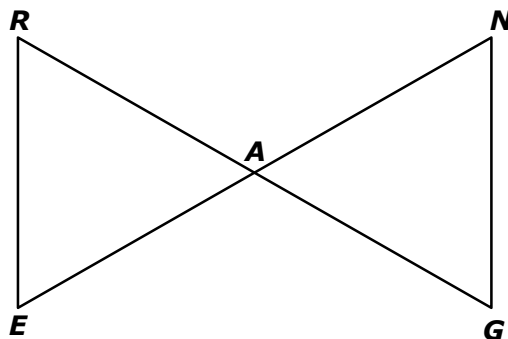
EXAMPLE ITEMS Geometry, Sem 1

- 10 \overline{GM} is an altitude of $\triangle AGE$.



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

- A 19.7
 - B 18.4
 - C 17.0
 - D 14.1
- 11 In the figure, $\overline{RA} \cong \overline{NA}$ and $\angle R \cong \angle N$.



Which triangle congruence theorem is used to prove $\triangle RAE \cong \triangle NAG$?

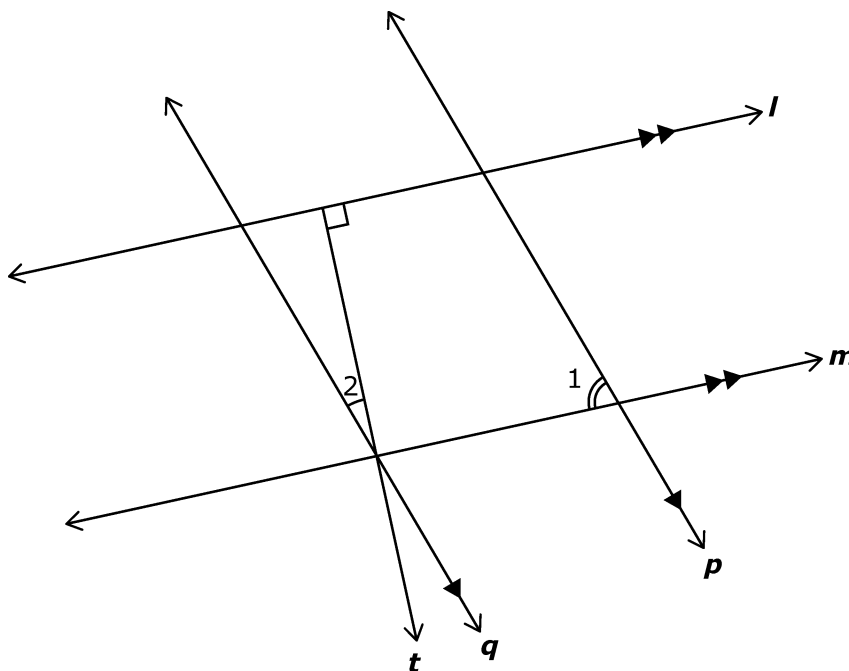
- A AAS (Angle–Angle–Side)
- B ASA (Angle–Side–Angle)
- C SAS (Side–Angle–Side)
- D SSA (Side–Side–Angle)

EXAMPLE ITEMS Geometry, Sem 1

12

Line l , line m , line p , line q , and ray t are coplanar.

Given: $m\angle 1 = 7x + 3.5$
 $m\angle 2 = 2x + 10$



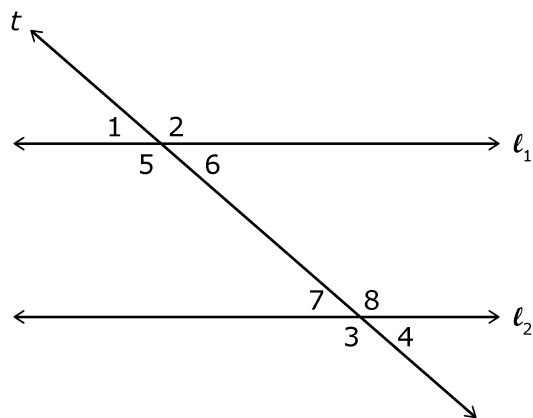
What value of x makes the information in this diagram true?

+	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.

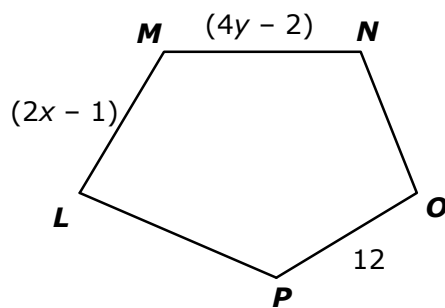
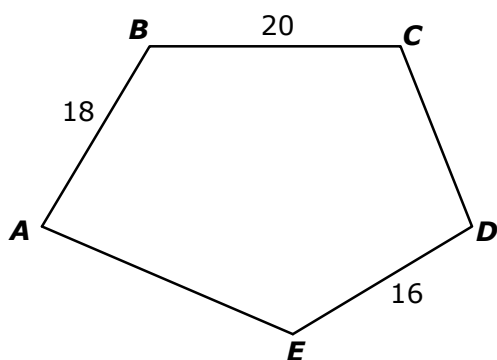
EXAMPLE ITEMS Geometry, Sem 1

- 13 In the diagram, $l_1 \parallel l_2$



Based on the information in the diagram, which pair of angles are **not** congruent?

- A $\angle 3$ and $\angle 5$
 - B $\angle 5$ and $\angle 8$
 - C $\angle 2$ and $\angle 5$
 - D $\angle 5$ and $\angle 7$
- 14 In the figures, pentagon $ABCDE$ and pentagon $LMNOP$ are drawn with the dimensions shown.

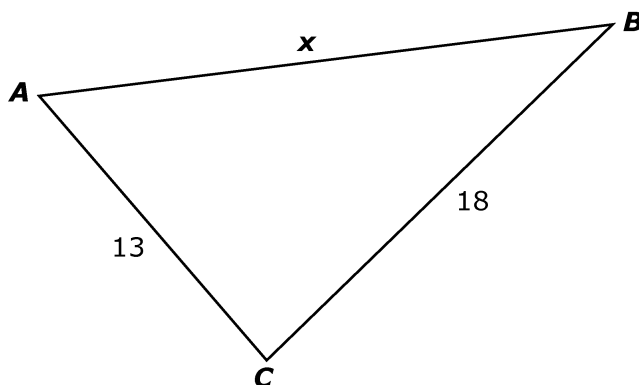


If pentagon $ABCDE$ is similar to pentagon $LMNOP$, what is the value of x ?

- A 5.83
- B 6.25
- C 7.25
- D 15.5

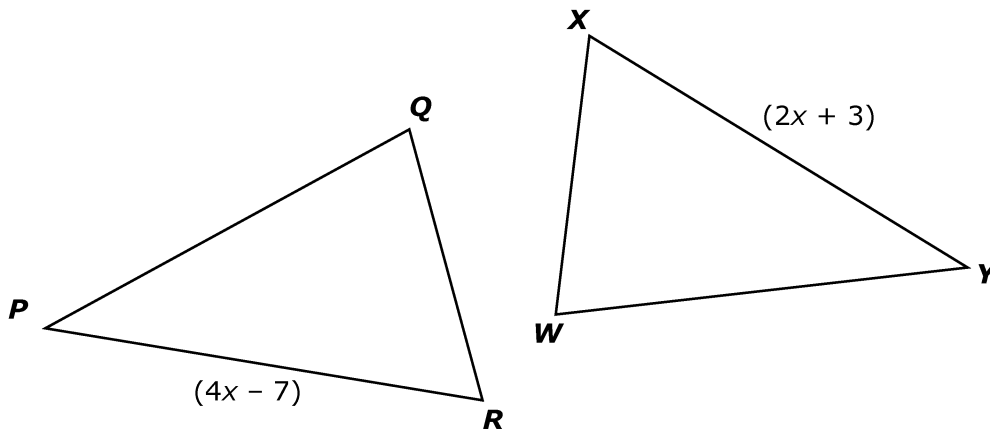
EXAMPLE ITEMS Geometry, Sem 1

- 15 In $\triangle ABC$, $AC = 13$ and $BC = 18$ as shown.



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

- A $13 < x < 18$
 - B $13 \leq x \leq 18$
 - C $5 < x < 31$
 - D $5 \leq x \leq 31$
- 16 In the diagram, $\triangle PQR \cong \triangle YWX$.



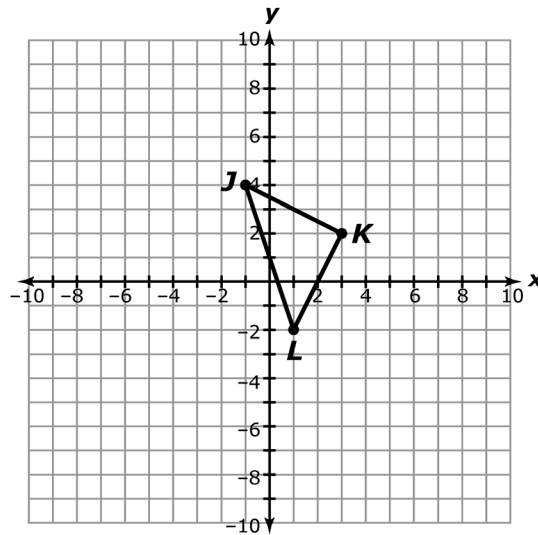
Based on the information in the diagram, what is the length of \overline{XY} ?

- A 2
- B 5
- C 7
- D 13

EXAMPLE ITEMS Geometry, Sem 1

17

Triangle JKL is shown on the coordinate grid.



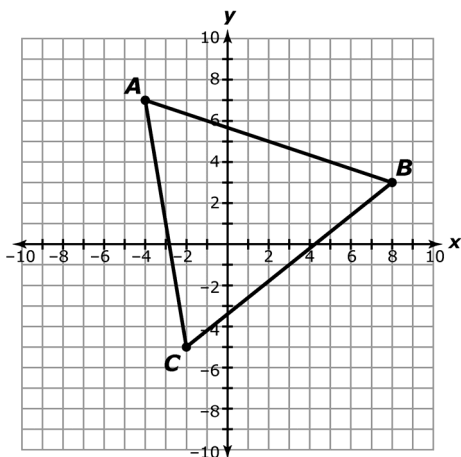
If $\triangle JKL$ is rotated 90° clockwise about the origin and then reflected across the y -axis, which rule describes these transformations?

- A $(x, y) \rightarrow (y, -x)$
- B $(x, y) \rightarrow (-y, -x)$
- C $(x, y) \rightarrow (-x, y)$
- D $(x, y) \rightarrow (y, x)$

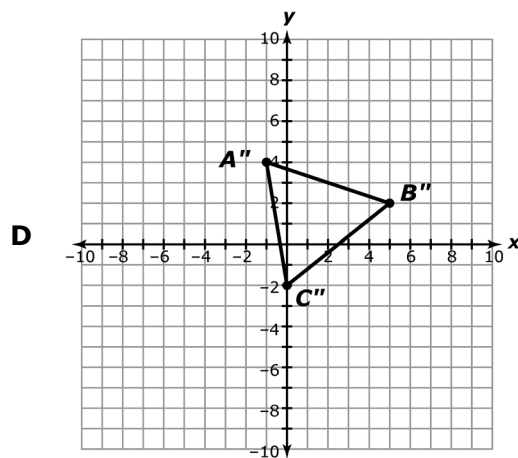
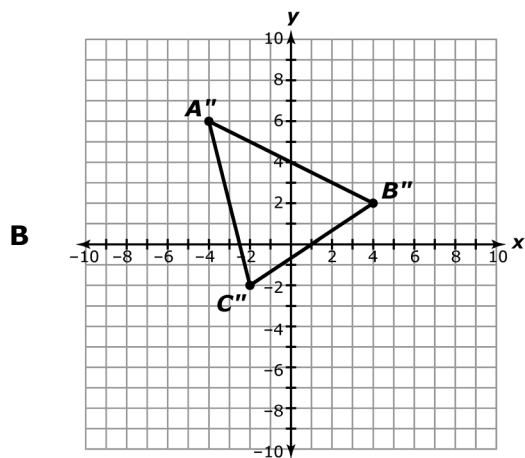
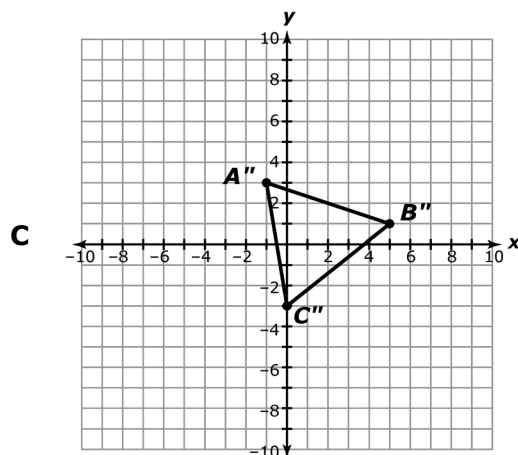
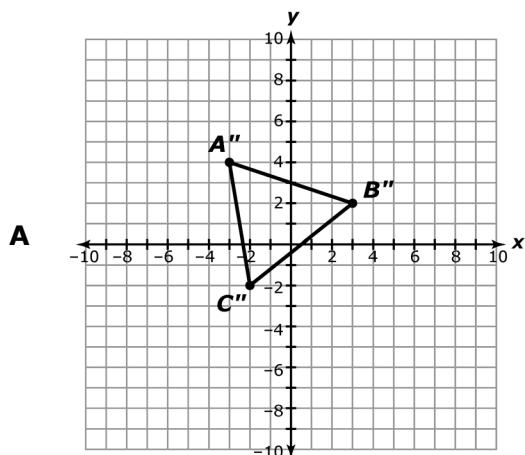
EXAMPLE ITEMS Geometry, Sem 1

18

Triangle ABC is shown on the coordinate grid.



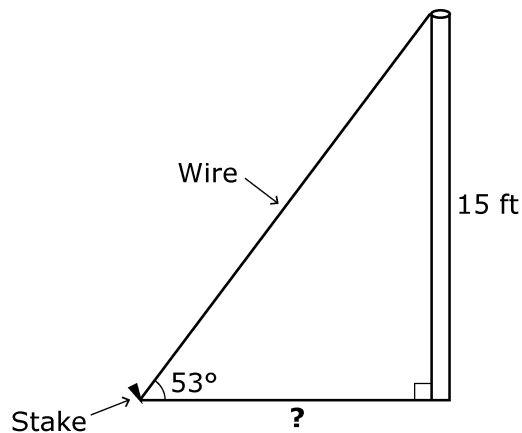
If $\triangle ABC$ is translated using the rule $(x, y) \rightarrow (x - 2, y + 1)$ and then dilated by a scale factor of $\frac{1}{2}$ with the origin as the center of dilation, which graph represents $\triangle A''B''C''$?



EXAMPLE ITEMS Geometry, Sem 1

19

A wire is attached from the top of the pole to a stake in the ground as shown.

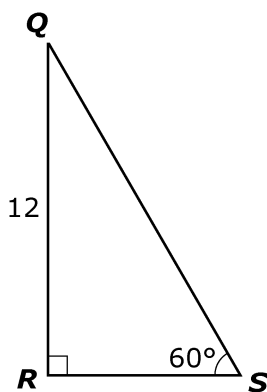


Based on the information in the diagram, approximately how far is the stake from the base of the pole?

- A 11.3 feet
- B 18.8 feet
- C 19.9 feet
- D 24.9 feet

20

Triangle QRS is shown.



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

- A $4\sqrt{3}$
- B $8\sqrt{3}$
- C 6
- D 12

EXAMPLE ITEMS Geometry Key, Sem 1

Item#	Key	SE	SE Justification
1	B	G.6A	Verify theorems about angles formed by the intersection of lines including parallel lines cut by a transversal and apply these relationships to solve problems.
2	C	G.6D	Verify theorems about the relationships in triangles, including medians, and apply these relationships to solve problems.
3	7	G.8A	Apply theorems about similar triangles, including the Triangle Proportionality theorem to solve problems.
4	D	G.2B	Use midpoint formulas to verify geometric relationships.
5	B	G.2C	Determine an equation of a line parallel to a given line that passes through a given point.
6	A	G.5C	Use the constructions of perpendicular bisectors to make conjectures about geometric relationships.
7	C	G.6D	Apply theorems about the relationships in triangles, including the sum of interior angles, to solve problems.
8	B	G.6B	Prove two triangles are congruent by applying the Side-Angle-Side congruence.
9	9	G.5A	Investigate patterns to make conjectures about geometric relationships, including exterior angles of polygons.
10	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.
11	B	G.6B	Prove two triangles are congruent by applying the Angle-Side-Angle congruence conditions.
12	8.5	G.6A	Verify theorems about angles formed by the intersection of lines including vertical angles, and angles formed by parallel lines cut by a transversal and apply these relationships to solve problems.
13	D	G.5A	Investigate patterns to make conjectures about geometric relationships, including angles formed by parallel lines cut by a transversal.
14	C	G.7A	Apply the definition of similarity in terms of a dilation to identify similar figures and their proportional sides.
15	C	G.5D	Apply the Triangle Inequality theorem to solve problems.
16	D	G.6C	Apply the definition of congruence, in terms of rigid transformations, to identify congruent figures and their corresponding sides.
17	B	G.3A	Perform transformations of figures in a plane using coordinate notation.
18	A	G.3B	Determine the image of a given two-dimensional figure under a composition of both rigid and non-rigid transformations.
19	A	G.9A	Determine the lengths of sides and measures of angles in a right triangle by applying the tangent ratio to solve problems.
20	A	G.9B	Apply the relationships in special right triangles 30° - 60° - 90° to solve problems.