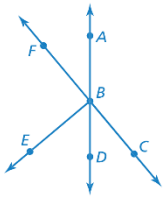
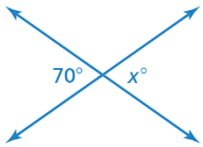
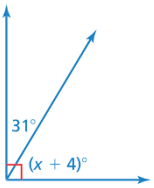
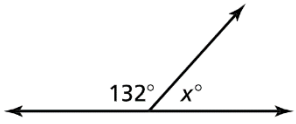
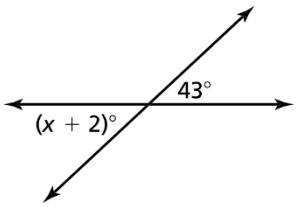
Name _____ Date _____

MAFS.7.G.2.5

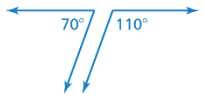
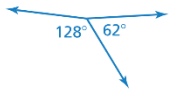
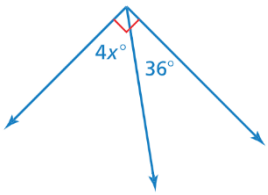
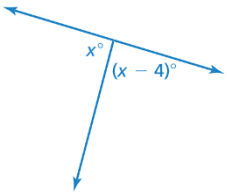
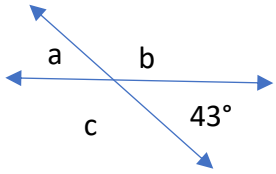
Use facts about vertical and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.

7.1 Big Ideas	I can…	
Level 1	define adjacent and vertical angles.	Adjacent angles are Vertical angles are
	identify adjacent and vertical angles.	**Use the figure shown.** **a. Name a pair of adjacent angles.** **b. Name a pair of vertical angles.** 
Level 2	use facts about angle relationships to find the unknown angle measure in a figure	**Tell whether the angles are *adjacent* or *vertical*. Then find the value of *x*.** **a.** 
Level 3	use facts about angle relationships to write and solve multistep equations for an unknown angle in a figure	**b.** 
Level 4	find the measures of the unknown angles in a figure	**Tell whether the angles are *adjacent* or *vertical*. Then find the value of *x*.** **a.**  **b.** 

Name _____ Date _____

MAFS.7.G.2.5

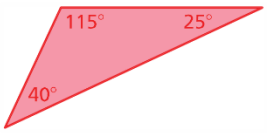
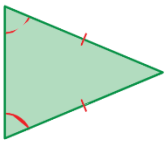
Use facts about complementary and supplementary angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.

7.2 Big Ideas	I can…	
Level 1	define complementary and supplementary angles.	Complementary angles are Supplementary angles are
	identify complementary and supplementary angles.	**Tell whether the angles are *complementary*, *supplementary*, or *neither*.** **a.**  **b.**  **c.** 
Level 2	use facts about angle relationships to find the unknown angle measure in a figure	**Tell whether the angles are *complementary* or *supplementary*. Then find the value of *x*.** **a.** 
Level 3	use facts about angle relationships to write and solve multistep equations for an unknown angle in a figure	**b.** 
Level 4	find the measures of the unknown angles in a figure	Find angle measures a, b, and c. Use the definitions of vertical, adjacent, supplementary, or complementary angles to support each step. 

Name _____ Date _____

MAFS.7.G.1.2

Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.

<table>
<tr><td>7.3
Big Ideas</td><td>I can…</td><td></td></tr>
<tr><td>Level 1</td><td>Classify Triangles</td><td>Classify each triangle.
a. 
b.  </td></tr>
<tr><td>Level 2</td><td>draw polygons with given conditions</td><td>Draw a triangle with angle measures of 30°, 60°, and 90°. Then classify the triangle.</td></tr>
<tr><td>Level 3</td><td>constructs geometric shapes given a combination of angle and side conditions; notices when conditions determine a unique triangle, more than one triangle, or no triangle</td><td>Nathan wants to draw a triangle. He knows that two of the side lengths are 5 inches and 7 inches.

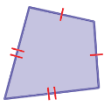
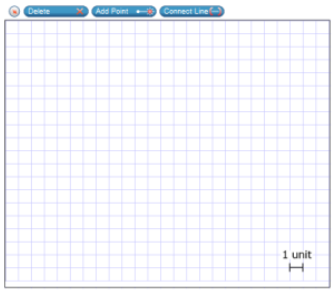
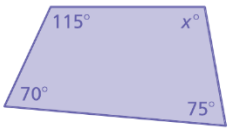
What is a possible length for the third side?

<table>
<tr><th>Information</th><th colspan="2">Triangle possible?
Check (☑) the correct answer</th><th>Reason</th></tr>
<tr><td>a.
Angle B = 50°,
AC = 3 cm,
BC = 5 cm.</td><td>Unique triangle
More than one triangle
Not possible</td><td></td><td></td></tr>
<tr><td>b.
AB = 10 cm,
BC = 11 cm,
AC = 9 cm.</td><td>Unique triangle
More than one triangle
Not possible</td><td></td><td></td></tr>
<tr><td>c.
Angle A = 40°,
Angle B = 60°,
Angle C = 80°.</td><td>Unique triangle
More than one triangle
Not possible</td><td></td><td></td></tr>
<tr><td>d.
AB = 4 cm,
BC = 3 cm,
Angle B = 30°.</td><td>Unique triangle
More than one triangle
Not possible</td><td></td><td></td></tr>
</table></td></tr>
<tr><td>Level 4</td><td>explains the conditions of a unique triangle, more than one triangle, or no triangle</td><td></td></tr>
<tr><td>Level 5</td><td>analyzes and justifies the conditions for a unique triangle, more than one triangle, or no triangle</td><td></td></tr>
</table>

Name _____ Date _____

MAFS.7.G.1

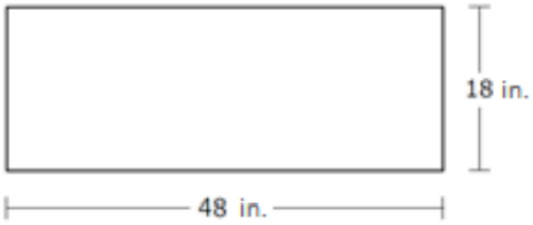
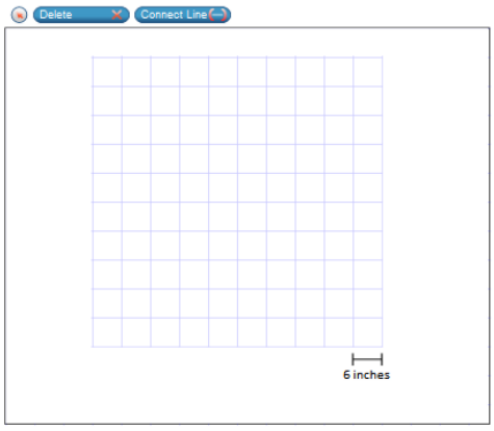
Draw, construct, and describe geometrical figures and describe the relationships between them.

7.4 Big Ideas	I can…	
Level 1	Classify Polygons	**Classify the quadrilateral.** **a.**  **b.** 
Level 2	draw polygons with given conditions	Use the Connect Line tool to draw a figure that has at least one pair of parallel sides and two side lengths of 5 units and 7 units. 
Level 3	Find the missing angle measure of a quadrilateral	 **Find the value of x.**
	constructs geometric shapes given a combination of angle and side conditions	**Draw a parallelogram with a 60° angle and a 120° angle.**
Level 4	Compare and Contrast Polygons	Name two quadrilaterals that have four equal sides. How are they different?

Name _____ Date _____

MAFS.7.G.1.1

Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.

7.5 Big Ideas	I can…	
Level 2	computes actual lengths given a geometric figure and a scale factor and finds actual lengths given two geometric figures with some unknown side measure	Lisa drew a picture of a boat. She used the scale shown. 1 inch : 6 feet The boat in her picture is 7 inches long. What is the length, in feet, of the actual boat?
Level 3	computes actual lengths and areas from a scale drawing and reproduces a scale drawing using a different scale	A rectangle with its dimensions, in inches (in), is shown.  Use the Connect Line tool to create a scale drawing of the rectangle. 
Level 4	solves problems involving scaled drawings of two-dimensional geometric figures by creating a drawing and finding the appropriate scale	Using a tree that is 8 feet tall, a person 5 feet tall, and a dog 2 feet tall, how might you scale all 3 down proportionally for a portrait?