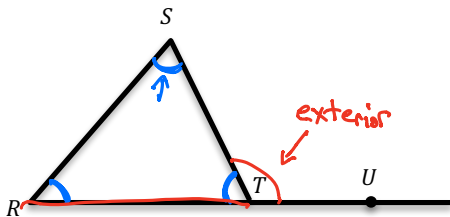


LEARNING OBJECTIVE: We will use the angle sum theorem to find missing interior and exterior angles of triangles. (G8M2L10)

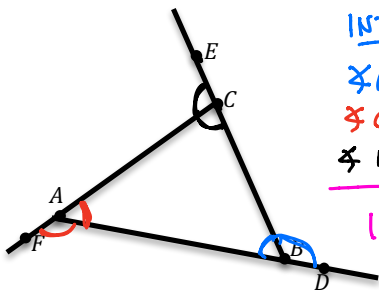
CONCEPT DEVELOPMENT:

The exterior angle of a triangle: This is formed when one of the sides of a triangle is extended. The interior angles of a triangle are inside and the **exterior angles are outside along the extended side.**

Examples:



$$\angle STU = \angle UTS$$



<u>INTERIOR</u>		<u>EXTERIOR</u>	
$\angle ABC$	+	$\angle CBD$	$= 180^\circ$
$\angle CAB$	+	$\angle FAB$	$= 180^\circ$
$\angle ACB$	+	$\angle ACE$	$= 180^\circ$
180	+	360	$= 540$

Why is $\angle CAB$
the same as $\angle BAC$?

GUIDED PRACTICE:

Steps for Finding Missing Angle Measures

1. Find the available measures of the angles of your triangle.
2. Use the facts we have learned about triangles (especially that all triangles are 180° or that straight angles are 180°) to help solve for your unknown angle measure.

<p> $16 + 17 = 33$ $180 - 33 = 147$ $\angle BCE = 180 - 147$ $\angle x = 33^\circ$ </p>	<p> $92 + 46 = 138$ $180 - 138 = 42$ $\angle x = 138^\circ$ </p> <p>REMOTE INTERIOR \angle FOR x</p>
<p> $x + 45 = 98$ $- 45 \quad - 45$ $x = 53^\circ$ </p>	<p> $109 + 1 = 180$ $180 - (54 + 71) = 55^\circ$ $\frac{109}{-54} = 55^\circ$ </p>
<p> $180 - 122 = 58$ $180 - 106 = 74$ $58 + 74 = 132$ $180 - 132 = 48$ $\angle x = 48^\circ$ </p>	<p> $44 + 163 = 207$ $360 - 207 = 153$ $\angle x = 153^\circ$ </p>

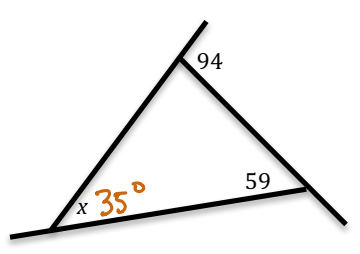
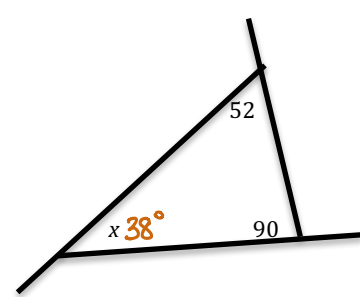
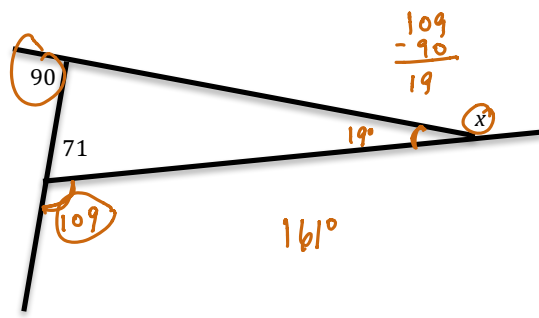
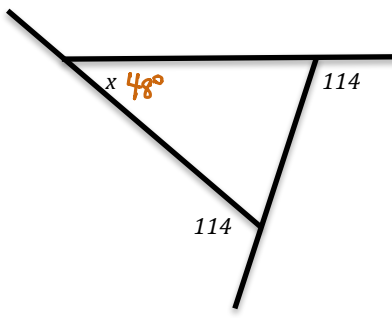
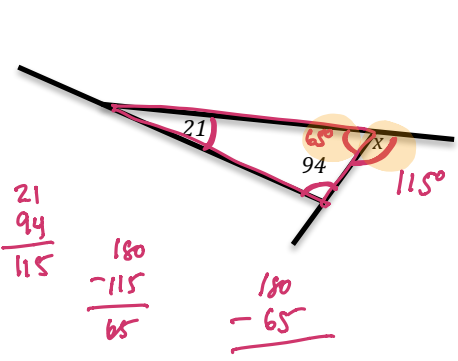
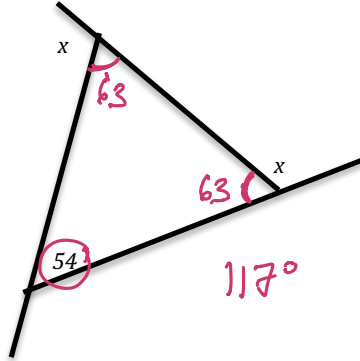
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INDEPENDENT PRACTICE:

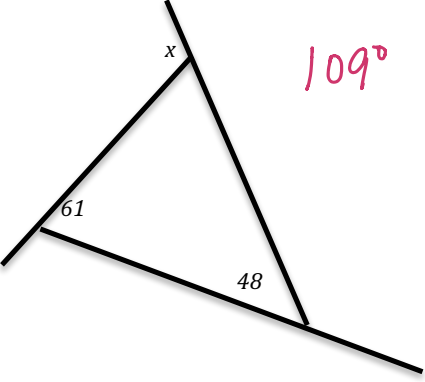
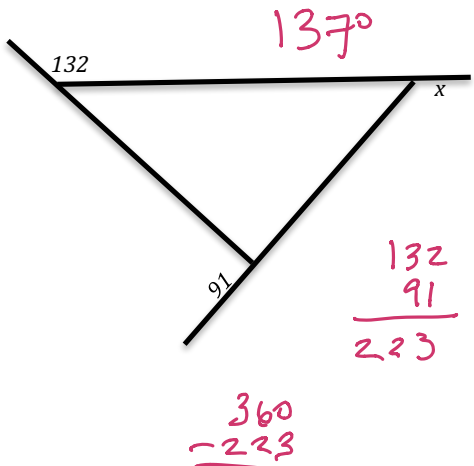
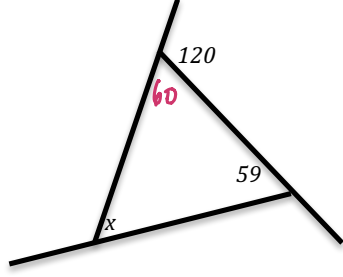
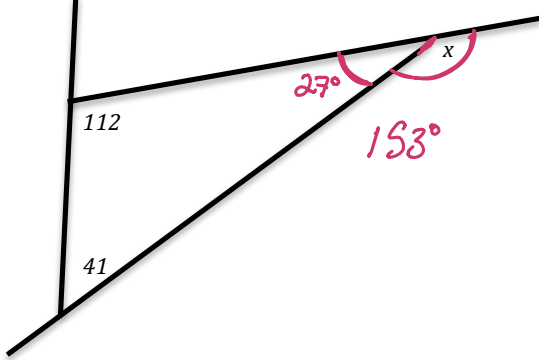
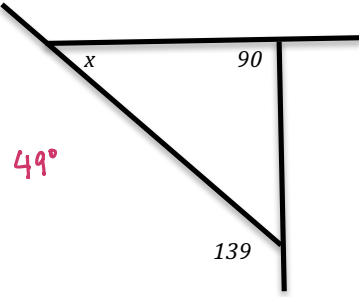
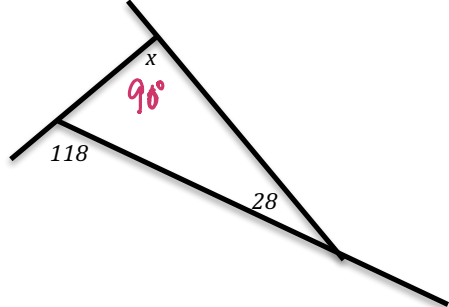
	
	
	

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 <p>Handwritten answer: 109°</p>	 <p>Handwritten calculations: 137° $\begin{array}{r} 132 \\ + 91 \\ \hline 223 \end{array}$ $\begin{array}{r} 360 \\ - 223 \\ \hline 137 \end{array}$</p>
 <p>Handwritten answer: 61°</p>	 <p>Handwritten answer: 153°</p>
 <p>Handwritten answer: 49°</p>	 <p>Handwritten answer: 90°</p>

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ACTIVATING PRIOR KNOWLEDGE:

Review triangle sum theorem.

CLOSURE:

