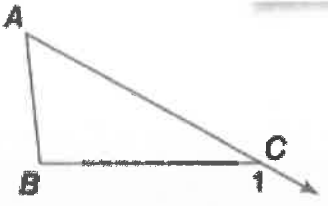


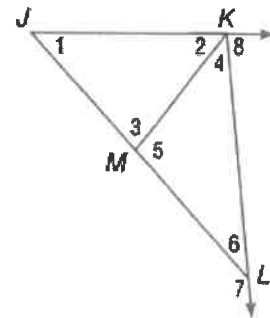
<p>Exterior Angle Inequality</p>	<p>The measure of an exterior angle of a triangle is greater than the measure of either of the corresponding remote interior angles.</p>	 <p><math>m\angle 1 &gt; m\angle A</math> <math>m\angle 1 &gt; m\angle B</math></p>
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1. Use the Exterior Angle Inequality Theorem to list all of the angles that satisfy the stated condition below:

a. Measures less than  $m\angle 7$

$\angle 4, \angle 5$  (Remote Interior Angles in  $\triangle MKL$ )

$\angle 1, \angle 2, \angle 4$  (in  $\triangle JKL$ )



b. Measures greater than  $m\angle 6$

$\angle 3$  (exterior angle to  $\triangle KLM$ )

$\angle 8$  (exterior ang to  $\triangle KLM$ )

\*  $\angle 6$  is remote interior angle to both  $\angle 3$  and  $\angle 8$

2. Use the Exterior Angle Inequality Theorem to list all of the angles that satisfy the stated condition below:

a. Measures less than  $m\angle 1$

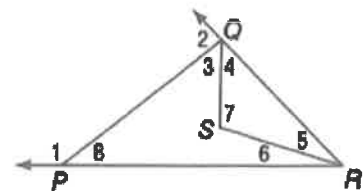
$\angle 3, \angle 4, \angle 6, \angle 5$

b/c  $m\angle 1 > m\angle 3 + m\angle 4$

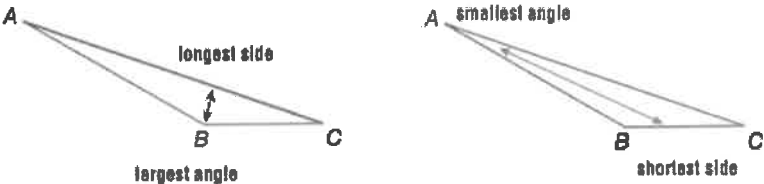
$m\angle 1 > m\angle 6 + m\angle 5$

b. Measures greater than  $m\angle 8$

$\angle 2$  b/c exterior angle of  $\triangle PQR$



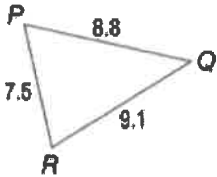
Angle-Side Inequalities:



★ opposite each other

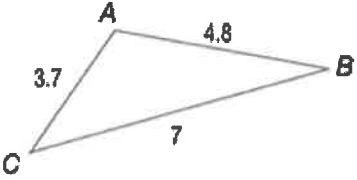
	<p>If one side of a triangle is longer than another side, then the angle opposite the longer side has a greater measure than the angle opposite the shorter side</p>	<p><math>XY &gt; YZ</math>, so <math>m\angle Z &gt; m\angle X</math>.</p>
	<p>If one angle of a triangle has a greater measure than another angle, then the side opposite the greater angle is longer than the side opposite the lesser angle</p>	<p><math>m\angle J &gt; m\angle K</math>, so <math>KL &gt; JL</math>.</p>

3. List the angles of  $\triangle PQR$  in order from smallest to largest.



$\angle Q, \angle R, \angle P$

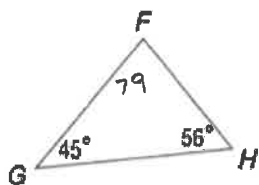
4. List the angles and sides of  $\triangle ABC$  in order from smallest to largest



$\angle B, \angle C, \angle A$

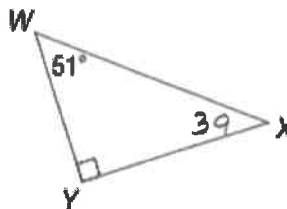
5.3 Inequalities in One Triangle

5. List the sides of  $\triangle FGH$  in order from shortest to longest.



$\overline{FH}$ ,  $\overline{GF}$ ,  $\overline{GH}$

6. List the angles and sides of  $\triangle WXY$  in order from smallest to largest.



$\overline{WY}$ ,  $\overline{YX}$ ,  $\overline{WX}$

