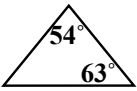
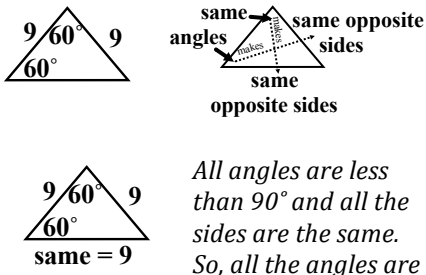
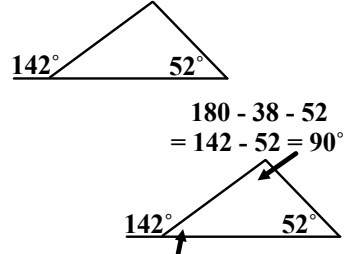
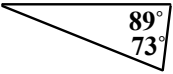
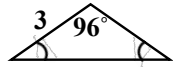
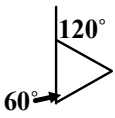
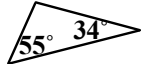
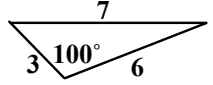
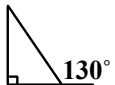


Classifying Triangles

The word "Classify" just means name its type. There are seven **classifications** for triangles. But, here's the thing: just like you can have more than one name, triangles can have more than one classification.

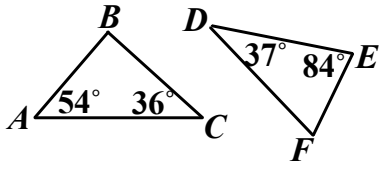
The Triangle Classifications are:

- | | | |
|------------------------------|---|---|
| Classifications about angles | [| 1. Acute —all of the angles are less than 90° |
| | | 2. Right —one of the angles is exactly 90° |
| | | 3. Obtuse —one of the angles is more than 90° |
| | | 4. Equiangular —all of the angles are the same
(which means all of the sides are the same) |
| Classifications about sides | [| 5. Scalene —none of the side lengths are the same
(which means none of the angles are the same) |
| | | 6. Isosceles —two or more of the side lengths are the same
(which means two or more of the angles are the same) |
| | | 7. Equilateral —all of the sides lengths are the same
(which means all of the angles are the same) |

<p>EXAMPLE</p>  <p>3rd angle: $54 + 63 + x = 180$ $117 + x = 180$ $x = 63^\circ$</p> <p>All of the angles are acute. Two of the angles are the same, so two sides are the same.</p> <p>Classify by Angles: <u>Acute</u></p> <p>Classify by Sides: <u>Isosceles</u></p>	<p>EXAMPLE</p>  <p><i>same angles</i> <i>same opposite sides</i> <i>same opposite sides</i></p> <p><i>All angles are less than 90° and all the sides are the same. So, all the angles are the same.</i></p> <p>Classify by Angles: <u>Acute & Equiangular</u></p> <p>Classify by Sides: <u>Isosceles & Equilateral</u></p>	<p>EXAMPLE</p>  <p>$180 - 38 - 52 = 142 - 52 = 90^\circ$</p> <p>$180 - 142 = 38^\circ$</p> <p>One of the interior angles is 90°. None of the Interior Angles are the same, so none of the sides are the same.</p> <p>Classify by Angles: <u>Right</u></p> <p>Classify by Sides: <u>Scalene</u></p>
<p>1.</p>  <p>Classify by Angles: _____</p> <p>Classify by Sides: _____</p>	<p>2.</p>  <p>Classify by Angles: _____</p> <p>Classify by Sides: _____</p>	<p>3.</p>  <p>Classify by Angles: _____</p> <p>Classify by Sides: _____</p>
<p>4.</p>  <p>Classify by Angles: _____</p> <p>Classify by Sides: _____</p>	<p>5.</p>  <p>Classify by Angles: _____</p> <p>Classify by Sides: _____</p>	<p>6.</p>  <p>Classify by Angles: _____</p> <p>Classify by Sides: _____</p>

Now, you're going to follow the same process, but with extra information. You'll have to determine what's important and what isn't before classifying the asked for triangle.

EXAMPLE: Classify $\triangle ABC$

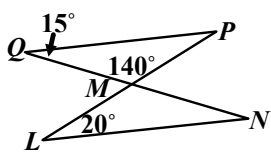


Ignore $\triangle DEF$. We want $\triangle ABC$.

3rd angle: $54 + 36 + x = 180$
 $90 + x = 180$
 $x = 90^\circ$

No angles are the same.
 One angle is 90°
 Classify by Angles: _____
 Right
 Classify by Sides: _____
 Scalene

EXAMPLE: Classify $\triangle LMN$



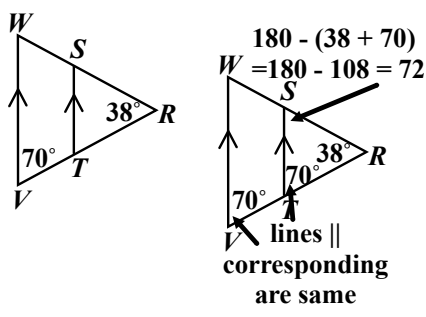
Focus on $\triangle LMN$.

$\angle QMP$ & $\angle LMN$ are vertical. So,
 $m\angle LMN = 140^\circ$

3rd angle: $20 + 140 + x = 180$
 $160 + x = 180$
 $x = 20^\circ$

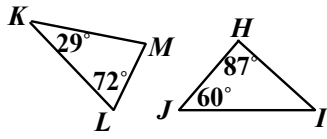
Two angles are the same, so two sides are the same.
 Classify by Angles: _____
 Obtuse
 Classify by Sides: _____
 Isosceles

EXAMPLE: Classify $\triangle RST$



Angles of $\triangle RST$ are 38° , 70° , & 72° .
 The angles are all acute, and none are the same.
 Classify by Angles: _____
 Acute
 Classify by Sides: _____
 Scalene

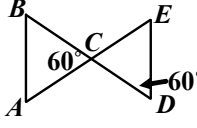
7. Classify $\triangle JHI$



Classify by Angles: _____

 Classify by Sides: _____

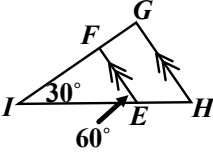
8. Classify $\triangle CDE$



Classify by Angles: _____

 Classify by Sides: _____

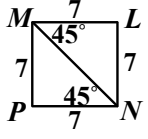
9. Classify $\triangle GHI$



Classify by Angles: _____

 Classify by Sides: _____

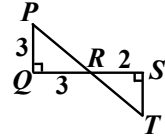
10. Classify $\triangle LMN$



Classify by Angles: _____

 Classify by Sides: _____

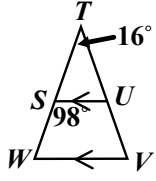
11. Classify $\triangle PQR$



Classify by Angles: _____

 Classify by Sides: _____

12. Classify $\triangle STU$



Classify by Angles: _____

 Classify by Sides: _____
