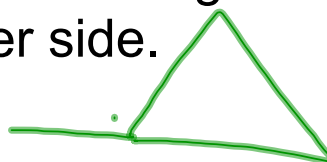
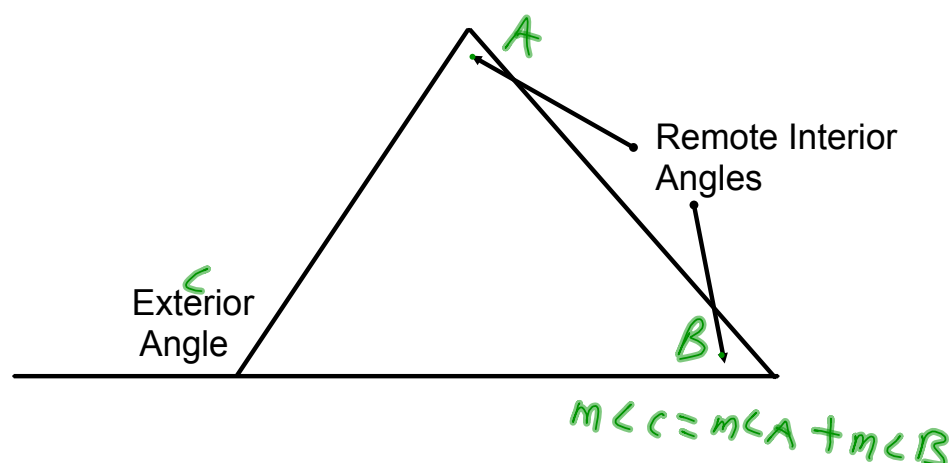


Exterior Angle:

- * An angle on the outside of the triangle.
- * Formed by one side of the triangle and the extension of another side.

**Remote Interior Angles:**

- * The interior angles of the triangle not adjacent to a given exterior angle.

**Exterior Angle Theorem:**

- * The measure of the exterior angle of a triangle is equal to the sum of the measures of the two remote interior angles.

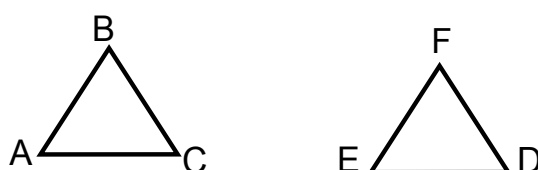
Angle Sum Theorem:

* All 3 angles of a triangle must add up to 180° .

$$*m\angle W + m\angle X + m\angle Y = 180$$

Third Angle Theorem:

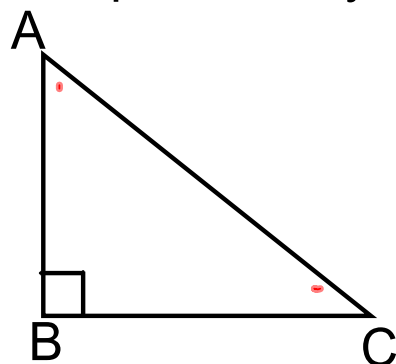
* If 2 angles of one triangle are congruent to 2 angles of a second triangle, then the third angles of the triangles are congruent.



If $\angle A \cong \angle D$ and $\angle B \cong \angle E$, then $\angle C \cong \angle F$.

Corollary:

* The acute angles of a right triangle are complementary.



$$m\angle A + m\angle C = 90^\circ$$

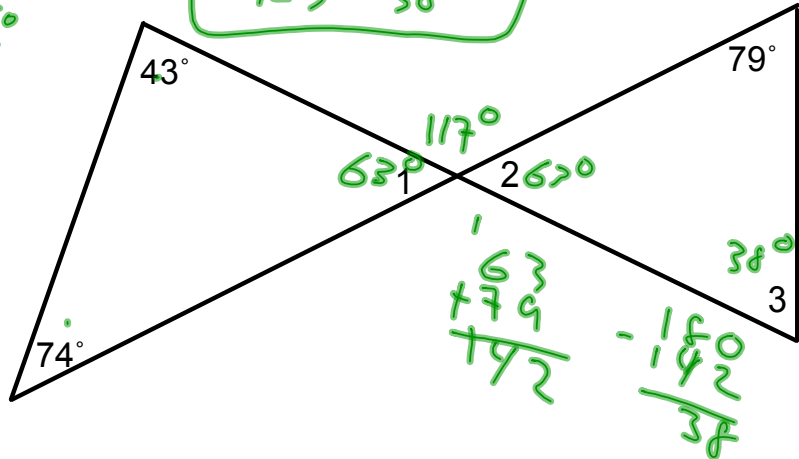
Corollary:

* There can be at most one right angle or one obtuse angle in a triangle.

1. Find the missing angle measures.

$$\begin{array}{r} 74 \\ + 43 \\ \hline 117 \\ 180 \\ - 117 \\ \hline 63 \end{array}$$

$$\begin{array}{l} m\angle 1 = 63^\circ \\ m\angle 2 = 63^\circ \\ m\angle 3 = 38^\circ \end{array}$$

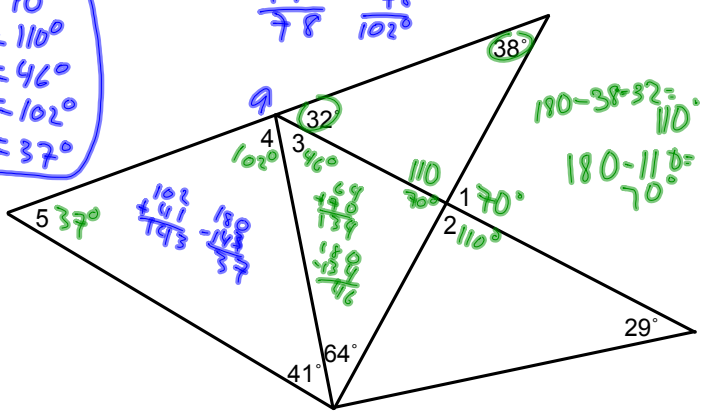


$$\begin{array}{r} 63 \\ + 79 \\ \hline 142 \\ 180 \\ - 142 \\ \hline 38 \end{array}$$

2. Find the measure of each numbered angle in the figure.

$$\begin{array}{l} m\angle 1 = 70^\circ \\ m\angle 2 = 110^\circ \\ m\angle 3 = 46^\circ \\ m\angle 4 = 102^\circ \\ m\angle 5 = 37^\circ \end{array}$$

$$\begin{array}{r} 32 \\ + 46 \\ \hline 78 \\ 180 \\ - 78 \\ \hline 102 \end{array}$$



$$\begin{array}{l} 180 - 38 - 32 = 110 \\ 180 - 110 = 70 \end{array}$$

$$\begin{array}{r} 102 \\ + 41 \\ \hline 143 \\ 180 \\ - 143 \\ \hline 37 \end{array}$$