

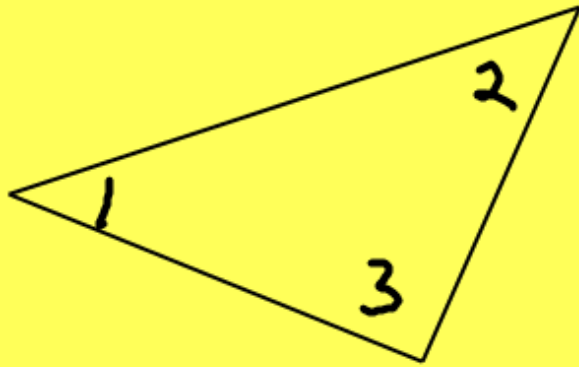
Lesson 4-2

Angles of Triangles



You will be able to apply the triangle-sum and exterior angle theorems.

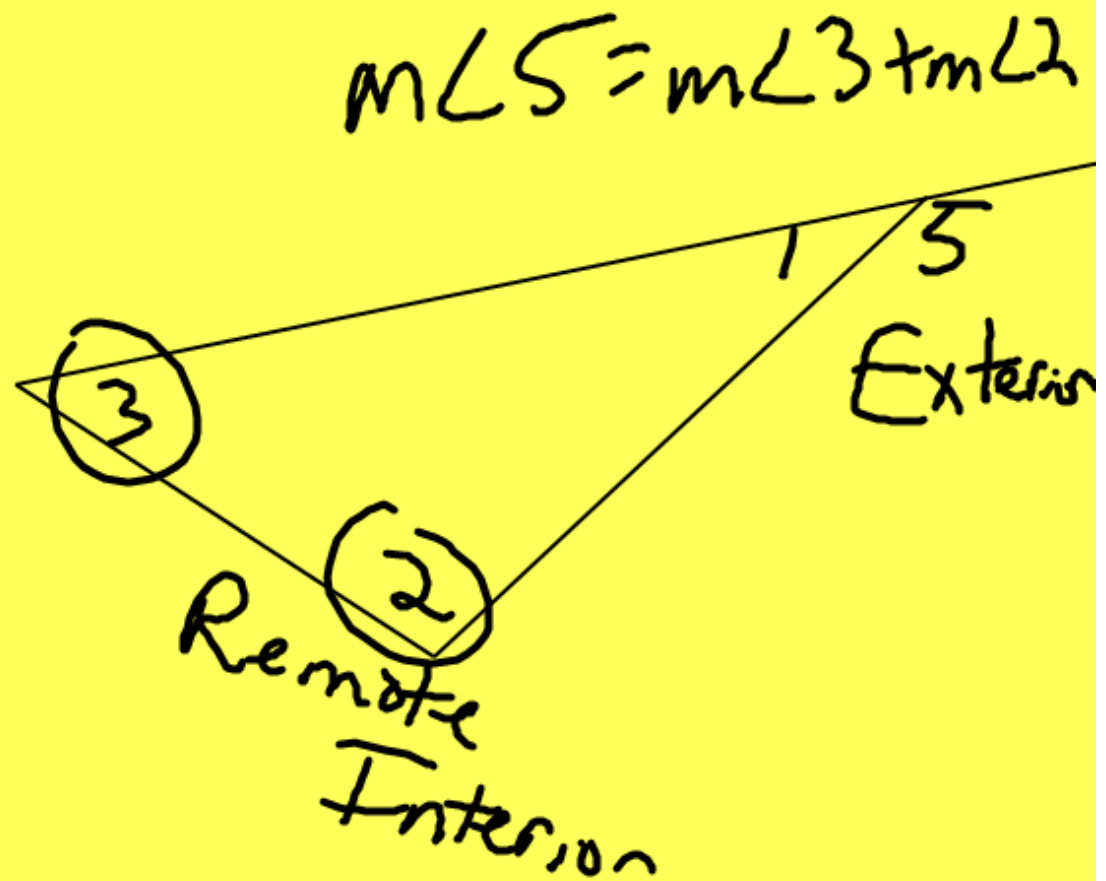
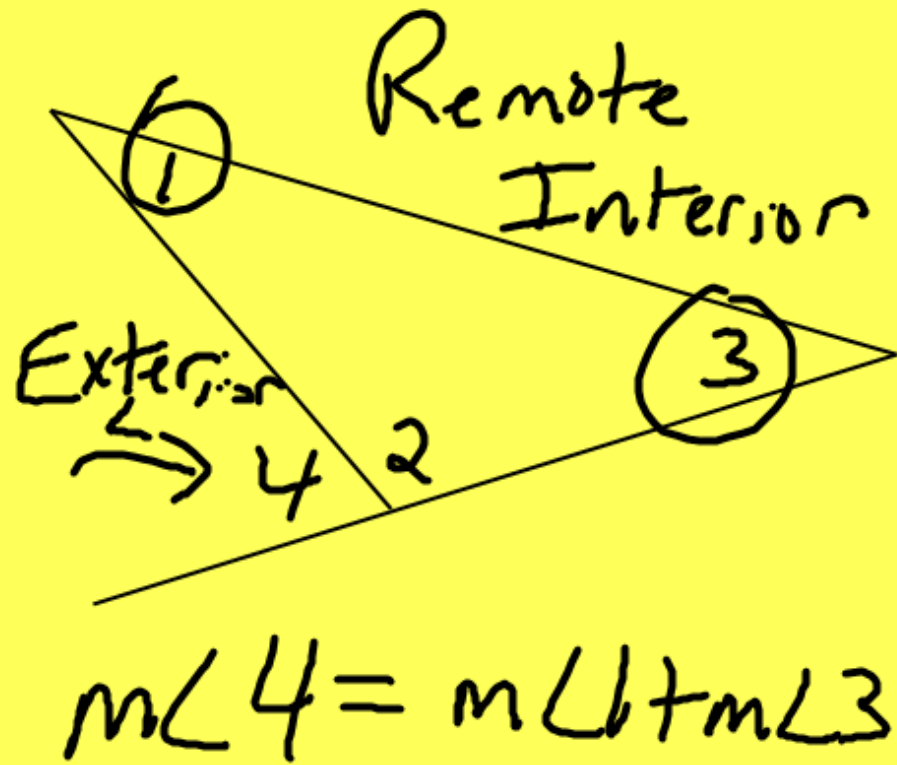
Triangle Sum Theorem:



$$m\angle 1 + m\angle 2 + m\angle 3 = 180^\circ$$

Sum of ^{or} 3 \angle 's of $\Delta = 180^\circ$

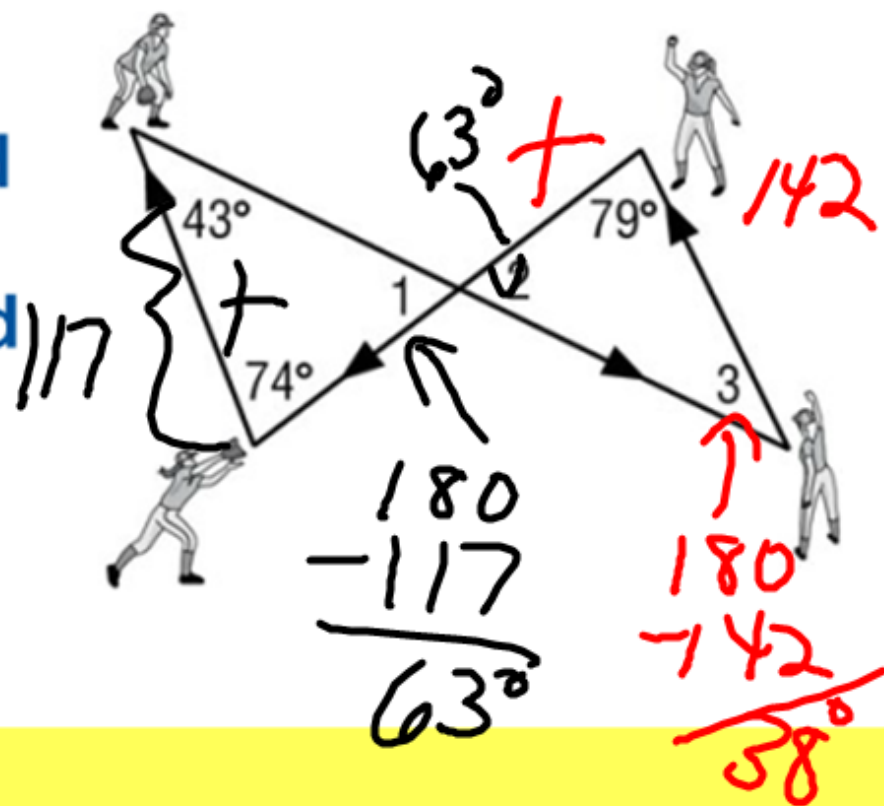
Exterior Angle Sum Theorem:



Real-World Example 1

Use the Triangle Angle-Sum Theorem

SOFTBALL The diagram shows the path of the softball in a drill developed by four players. Find the measure of each numbered angle.

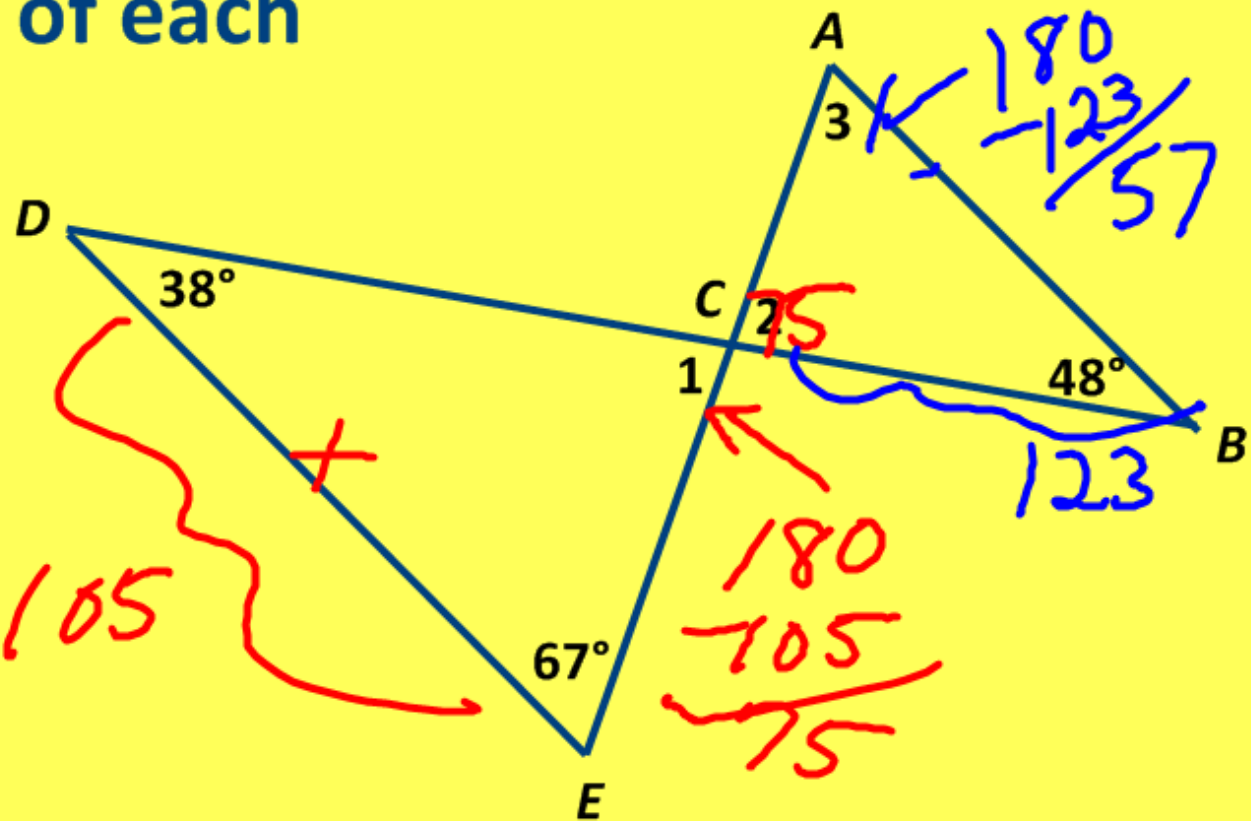


$$m\angle 1 = 63^\circ$$

$$m\angle 2 = 38^\circ$$

$$m\angle 3$$

Find the measure of each numbered angle



$$m\angle 1 = 75^\circ$$

$$m\angle 2 = 75^\circ$$

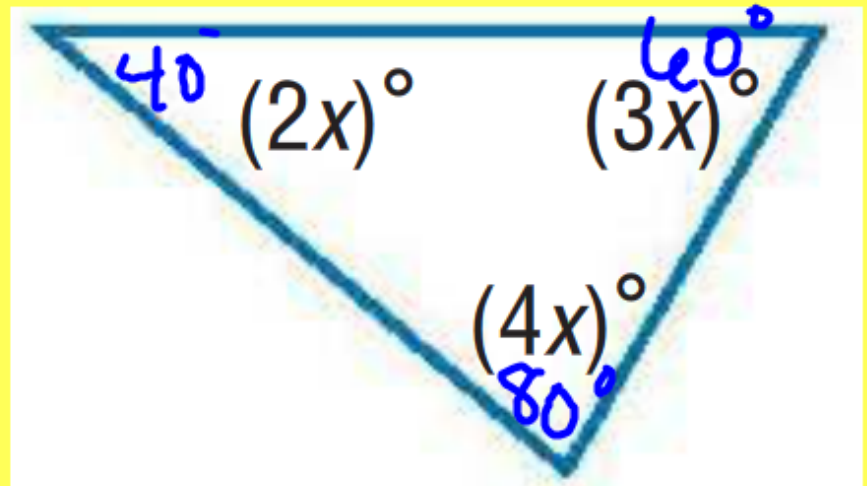
$$m\angle 3 = 57^\circ$$

Find the value of x and the measures of the three angles

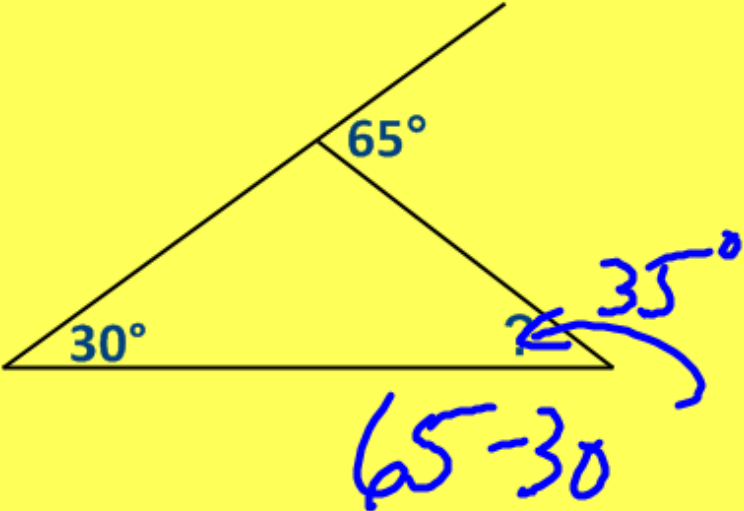
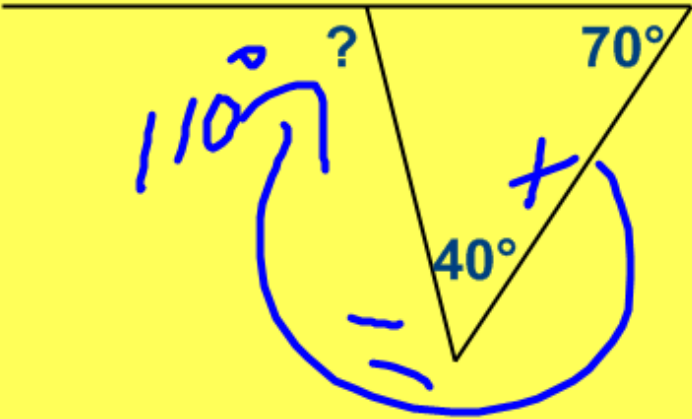
$$2x + 3x + 4x = 180$$

$$\frac{9x}{9} = \frac{180}{9}$$

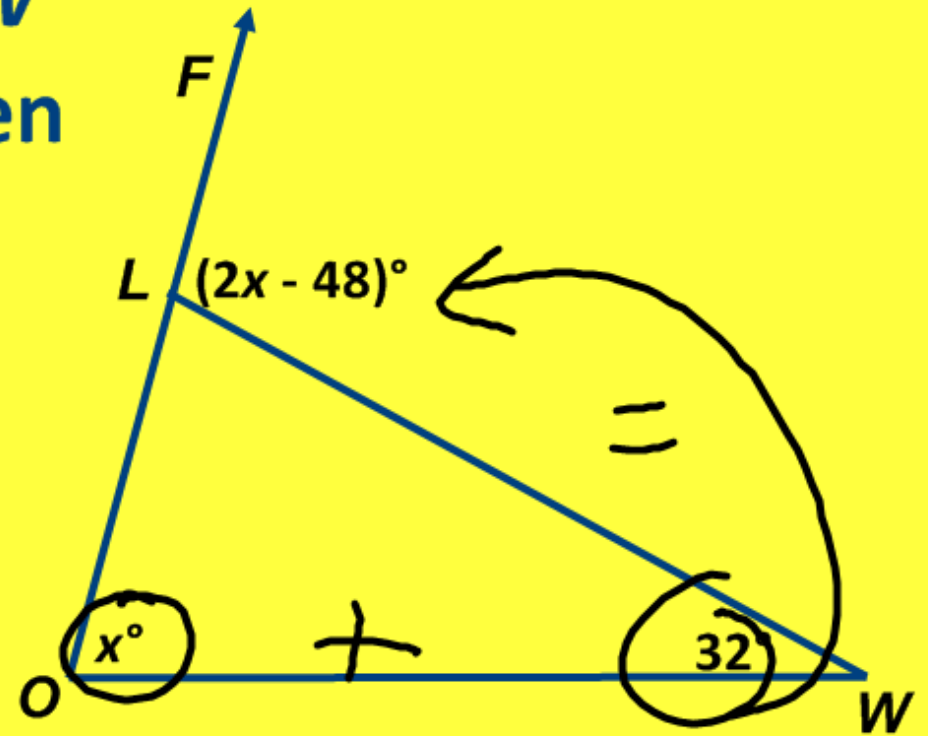
$$x = 20$$



Find the measure of each missing angle



Find the measure of $\angle FLW$ in the fenced flower garden shown.



$$\begin{array}{r} x + 32 = 2x - 48 \\ -x \qquad \qquad -x \\ \hline \end{array}$$

$$\begin{array}{r} 32 = x - 48 \\ +48 \qquad \qquad +48 \\ \hline 80 = x \end{array}$$