

Name: Key Date: _____ Period: _____

CCGPS Analytic Geometry

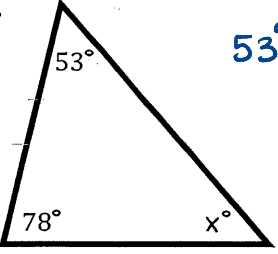
Notes: Interior and Exterior Angles of Triangles

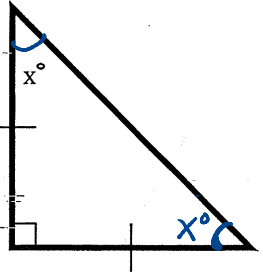
Homework: Attached worksheet

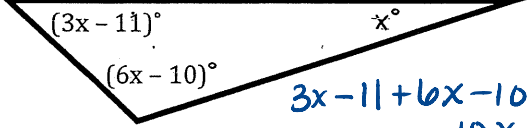
Essential Question: What are the steps to finding the measure of interior and exterior angles of a polygon?

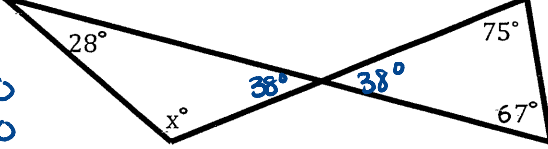
The **Triangle Angle Sum Theorem** states that the sum of the angles in a triangle is 180°.

Examples: Find the value of x.

a.  $53^\circ + 78^\circ + x^\circ = 180^\circ$
 $x = 49$

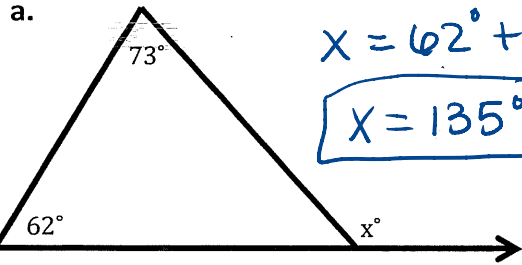
b.  $x = 45$

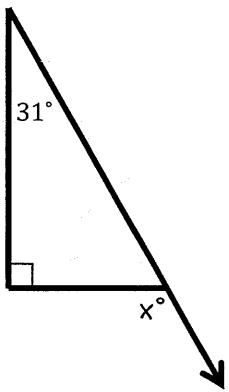
c.  $3x - 11 + 6x - 10 + x = 180$
 $10x - 21 = 180$
 $10x = 201$
 $x = 20.1$

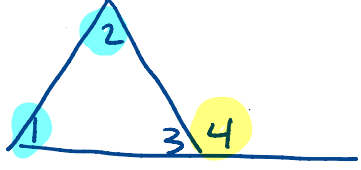
d.  $x + 28 + 38 = 180$
 $x = 114^\circ$

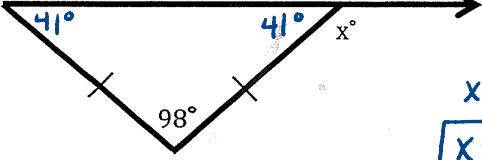
The **Exterior Angle Theorem** states that the measure of an exterior angle of a triangle is equal to the sum of the measures of the two **non-adjacent** interior angles.

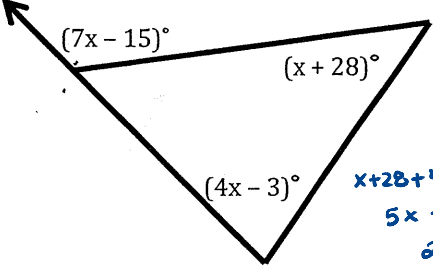
Examples: Find the value of x.

a.  $x = 62^\circ + 73^\circ$
 $x = 135^\circ$

b.  $90^\circ + 31^\circ = x^\circ$
 $121 = x$

 $m\angle 4 = m\angle 1 + m\angle 2$

c.  $x^\circ = 98^\circ + 41^\circ$
 $x = 139$

d.  $x + 28 + 4x - 3 = 7x - 15$
 $5x + 25 = 7x - 15$
 $25 + 15 = 7x - 5x$
 $40 = 2x$
 $x = 20$