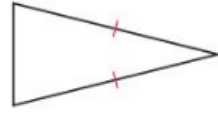


**Core Concept**

**Classifying Triangles by \_\_\_\_\_**



no congruent sides



at least 2 congruent sides



3 congruent sides

**Classifying Triangles by \_\_\_\_\_**

Acute Triangle



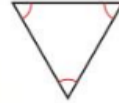
Right Triangle



Obtuse Triangle

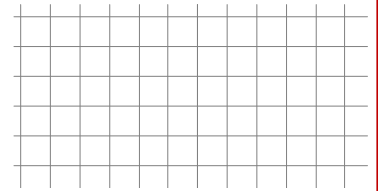


Equiangular Triangle



Draw each triangle:

(a) Scalene right triangle



(b) Obtuse isosceles

**Interior versus Exterior Angles:**

When the sides of a polygon are extended, other angles are formed. The original angles are the \_\_\_\_\_.

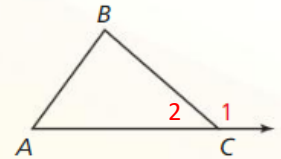
The angles that form linear pairs with the interior angles are the \_\_\_\_\_.



**Theorem**

**Theorem 5.2 Exterior Angle Theorem**

The measure of an exterior angle of a triangle is equal to the sum of the measures of the two nonadjacent interior angles.



Proof:

Ex 1:

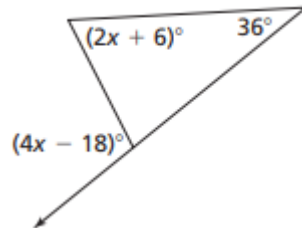


- $m\angle 1 = 60^\circ$
- $m\angle 2 = 100^\circ$
- $m\angle 3 = \underline{\hspace{2cm}}$
- $m\angle 4 = \underline{\hspace{2cm}}$

Note:

\_\_\_\_\_ = \_\_\_\_\_ + \_\_\_\_\_  
 \_\_\_\_\_ = \_\_\_\_\_ + \_\_\_\_\_

Ex 2: Find the value  $x$  using the Exterior Angle Theorem, then find the measure of each angle to check your understanding.



Ex 3: Find the value of  $x$  using the parallel lines and then find  $y$  using the Exterior Angle Theorem.

