Math 2

Name:___Key_____

Unit 4A Day 1 Notes – Intro to Triangles

Date:_____

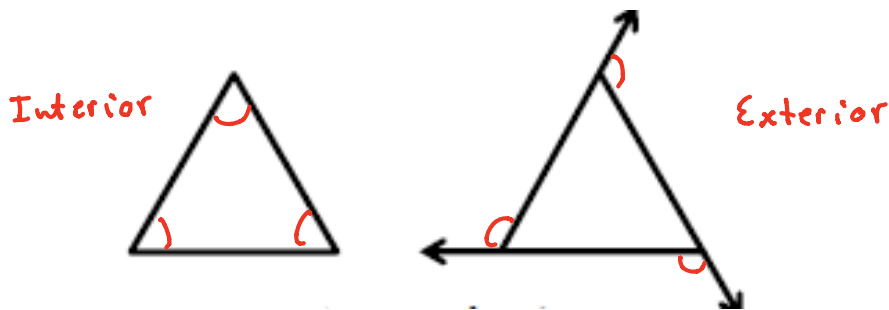Triangle: a polygon w/ three sides

Classifying Triangles by its Sides:

Scalene	Isosceles	Equilateral
No Congruent Sides	Two Congruent Sides	Three Congruent Sides
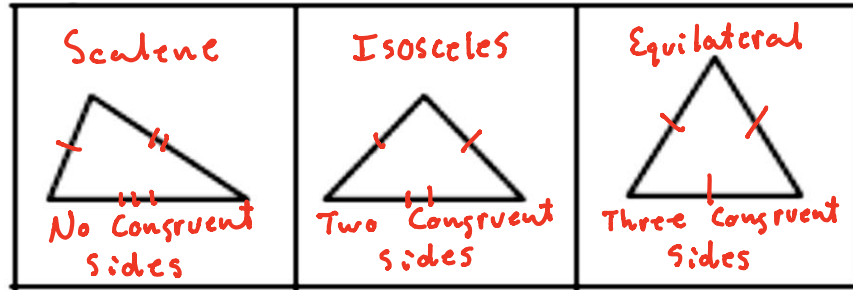
Classifying Triangles by its Angles:

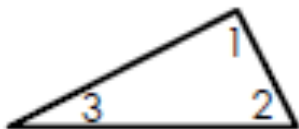| Acute	Obtuse	Right
All three ∠'s are acute	one obtuse ∠	one right ∠
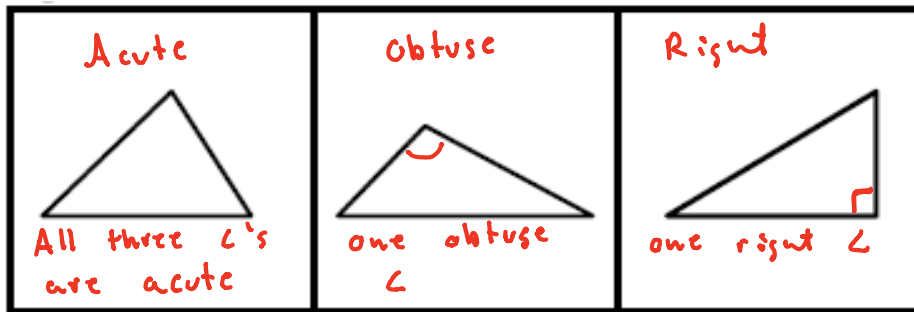
Equiangular Triangle: a triangle w/ three congruent angles

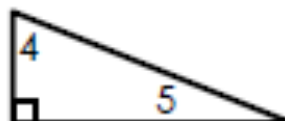Interior

Exterior

Triangle Sum Theorem:

the sum of the measures of the interior angles of a triangle is 180°

$$m\angle 1 + m\angle 2 + m\angle 3 = 180$$
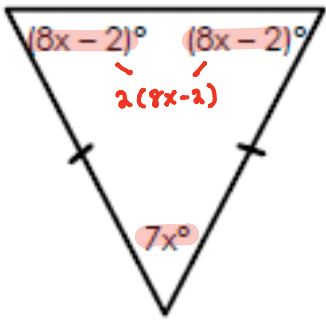
Corollary to the Triangle Sum Theorem:

The acute angles of a right triangle add up to 90°
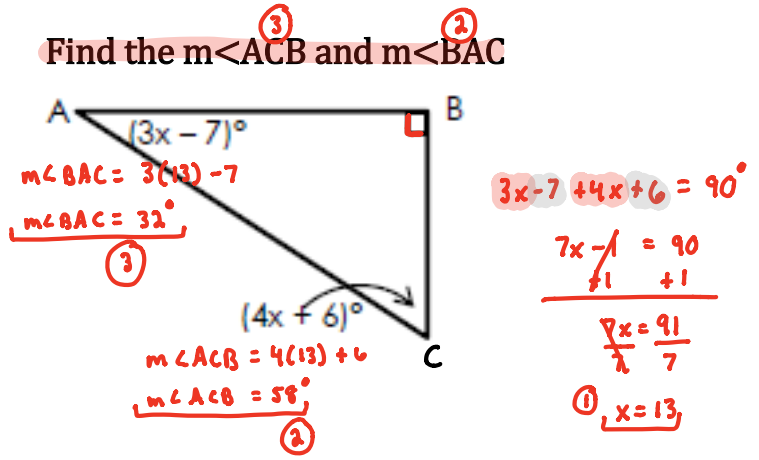
$$m\angle 4 + m\angle 5 = 90$$

Examples:

Find the value of x

$2(8x-2) + 7x = 180°$

$16x - 4 + 7x = 180°$

$23x - 4 = 180$
$ +4 \quad +4$
─────────────
$\dfrac{23x}{23} = \dfrac{184}{23}$

$\underline{x = 8}$

Find the m<ACB and m<BAC

③ ②

$m\angle BAC = 3(13) - 7$

$\underline{m\angle BAC = 32°}$
③

$m\angle ACB = 4(13) + 6$

$\underline{m\angle ACB = 58°}$
②

$3x - 7 + 4x + 6 = 90°$

$7x - 1 = 90$
$ +1 \quad +1$
─────────────
$\dfrac{7x}{7} = \dfrac{91}{7}$
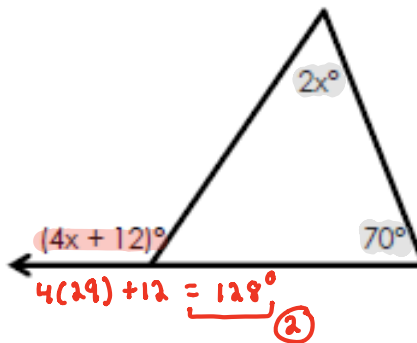
① $\underline{x = 13}$

Exterior Angle Theorem:

The measure of an exterior angle
of a triangle is equal to the sum
of the measures of the two non-adjacent
interior angles.
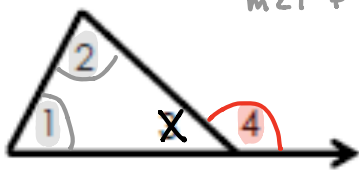
$m\angle 1 + m\angle 2 = m\angle 4$

Example:

Find the measure of the exterior angle shown

$2x° \quad 70°$

$(4x + 12)°$

$4(29) + 12 = \underline{128°}$
②

$2x + 70 = 4x + 12$
$-2x -2x$
───────────────
$70 = 2x + 12$
$-12 -12$
───────────────
$\dfrac{58}{2} = \dfrac{2x}{2}$

① $\underline{x = 29}$