Apply Triangle Sum Properties

| Vocabulary	Definition	Example
TRIANGLE $\triangle$	A triangle is a polygon with three sides. Polygon: A closed plane figure that is formed by 3 or more sides (line segments) and has NO curved edges	**Angles Sides** $\triangle ABC$ $\angle A, \angle B, \angle C$ $\overline{AB}, \overline{BC}, \overline{AC}$ $\triangle ACB$ $\triangle BAC$, $\triangle BCA$ $\triangle CAB$, $\triangle CBA$
INTERIOR ANGLES	When the sides of a polygon are extended, the original angles are the interior angles.	interior Angles $\angle A$ $\angle B$ $\angle C$ 3 interior $\angle$s $\angle 1$ $\angle 2$ $\angle 3$
EXTERIOR ANGLES	When the sides of a polygon are extended, the angles that form linear pairs with the interior angles are the exterior angles.	3 exterior Angles $\angle 4$ LP w/ $\angle 3$ $\angle 5$ LP w/ $\angle 1$ $\angle 6$ LP w/ $\angle 2$
COROLLARY to a THEOREM	A corollary to a theorem is a statement that can be proved easily using the theorem.	the DUH !!! reason example on the back
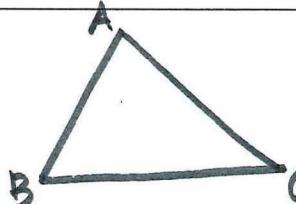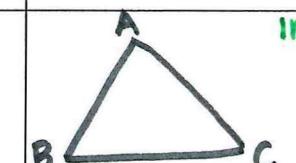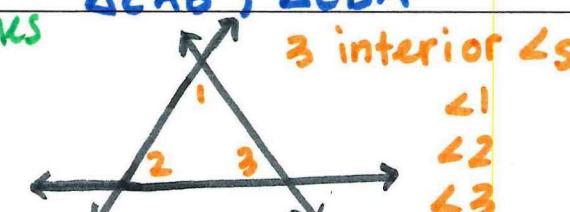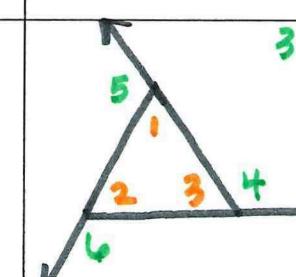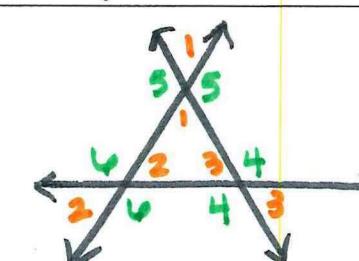
CLASSIFYING TRIANGLES BY SIDES 3 ways	SCALENE TRIANGLE	ISOSCELES TRIANGLE	EQUILATERAL TRIANGLE
	No congruent sides	At least 2 congruent sides minimum	3 congruent sides
	8 2 7	5 8 5 *special case	2 2 2
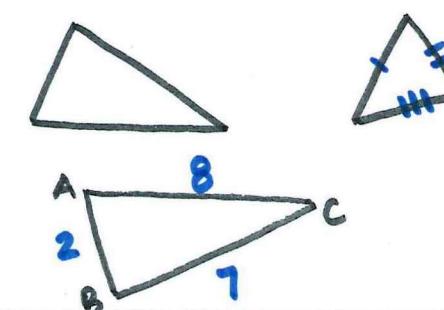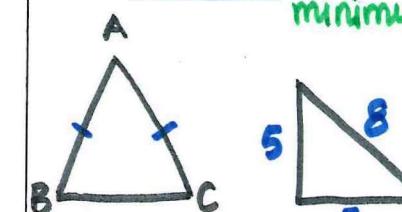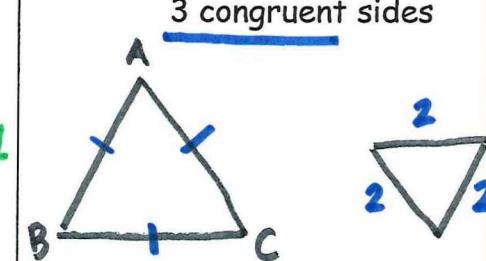
Equilateral $\triangle$s are ___always___ isosceles $\triangle$s.
Isosceles $\triangle$s are ___sometimes___ equilateral $\triangle$s.

	ACUTE TRIANGLE	RIGHT TRIANGLE	OBTUSE TRIANGLE	EQUIANGULAR TRIANGLE
CLASSIFYING TRIANGLES by ANGLES *4 ways*	3 acute angles	1 right angle	1 obtuse angle	3 congruent angles $180°/3 = 60°$
	30° 80° 70°	the other 2 angles must be acute	120° 40° 20° the other 2 angles must be acute	60° 60° 60° Equiangular = Equilateral
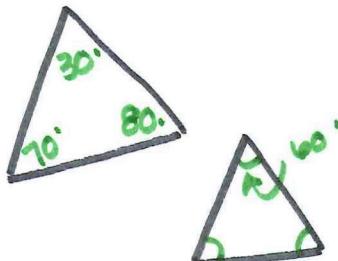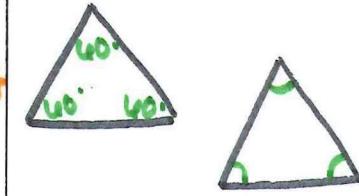
TRIANGLE SUM THEOREM $\triangle$ sum Thm.	The sum of the measure of the interior angles of a triangle is 180 °.	If A B C , then $m\angle A + m\angle B + m\angle C = 180°$ by $\triangle$ Sum Thm
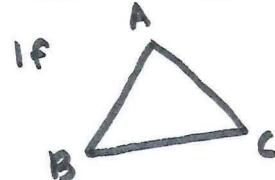
EXTERIOR ANGLE THEOREM Ext. $\angle$s Thm	The measure of an exterior angle of a triangle is equal to the sum of the measures of the two nonadjacent interior angles. 2 angles that the exterior $\angle$ does NOT form a LP with	A 60° 70° 130° B C D Find the $m\angle ACD$. $m\angle ACD = m\angle A + m\angle B$ $m\angle ACD = 60° + 70$ $m\angle ACD = 130°$ 80+40 =120° 60° 60+40 =100° 80° 40° =140° 40+80
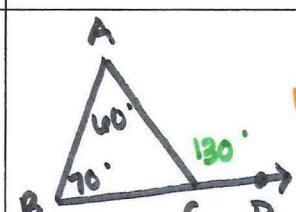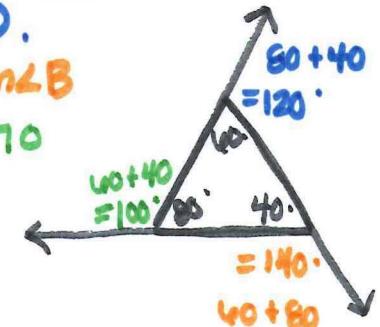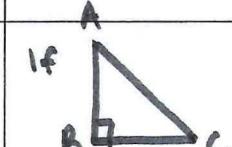
COROLLARY to the TRIANGLE SUM THEOREM corollary $\triangle$ sum (Duh!!!)	The acute angles of a right triangle are complementary.	If A B C , then $\angle A$ and $\angle C$ are complementary. by Corollary $\triangle$ sum $m\angle A + m\angle B + m\angle C = 180°$ $\triangle$ sum Thm. $m\angle A + 90° + m\angle C = 180°$ Substitution $m\angle A + m\angle C = 90°$ Subtraction $\angle A$ and $\angle C$ are complementary Def. of comp. $\angle$s