Inequalities:

--Sum of the lengths of any two sides of a triangle is greater than the length of the third side.

--Longest side of a triangle is opposite the largest angle.

--Exterior angle of a triangle is greater than either of the two non-adjacent interior angles.

Triangles:

By Sides:

Scalene – no congruent sides

Isosceles – 2 congruent sides

Equilateral – 3 congruent sides

By Angles:

Acute – all acute angles

Right – one right angle

Obtuse – one obtuse angle

Equiangular – 3 congruent angles(60°)

Equilateral $\leftrightarrow$ Equiangular

Exterior angle of a triangle equals the sum of the 2 non-adjacent interior angles.

Mid-segment of a triangle is parallel to the third side and half the length of the third side.

Definition of Acute Triangle/Definition of Obtuse Triangle – says that

- ✓ "If a triangle is an acute triangle,
  then all of its angles are less than 90 degrees."
- ✓ "If a triangle is an obtuse triangle,
  then one of its angles is greater than 180 degrees."

Congruent Triangles

SSS
SAS
ASA
AAS
HL (right triangles only)

NO donkey theorem
(SSA or ASS)

CPCTC (use after the triangles are congruent)

Triangle Sum Theorem

– says that

"If a polygon is a triangle,
then its interior angles will measure a
sum of 180 degrees."

Triangle Sum Theorem

– says that

"If a polygon is a triangle,
then its interior angles will measure a
sum of 180 degrees."