Review of Important Terms in Geometry

segment

A set of points on a line is a segment if and only if it consists of two points, called the end points, and all points between them.

angle

Figure formed by the union of two noncollinear rays, the sides, with a common end point, the vertex.

complementary angles

Two angles whose sum measure is 90.

supplementary angles

Two angles whose sum measure is 180.

vertical angles

Two nonadjacent angles formed by two intersecting lines.

transversal line

A line that intersects two or more coplanar lines at different points.

corresponding angles

A pair of nonadjacent angles – one interior, one exterior – both on the same side of the transversal.

alternate interior angles

A pair of nonadjacent angles, both interior angles, on opposite sides of the transversal.

alternate exterior angles

Pair of nonadjacent angles, both exterior angles, on opposite sides of the transversal.

Properties:

- Reflexive: $a = a$
- Symmetric: If $a = b$, then $b = a$
- Transitive: If $a = b$ and $b = c$, then $a = c$.

congruence

A basic geometric relationship. Congruent figures have the same size and shape.

CPCTC

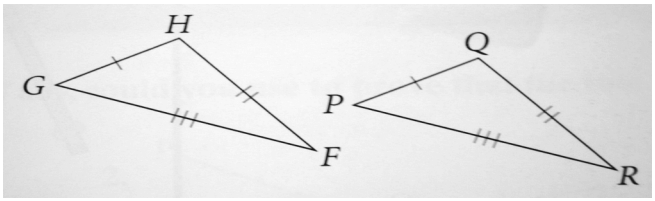
Corresponding Parts of Congruent Triangles are Congruent

A ***corollary*** is a statement which follows readily from a previous statement. In mathematics a corollary typically follows a theorem.

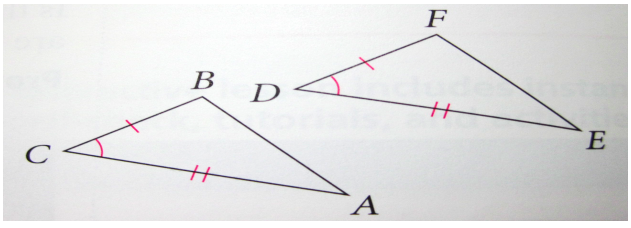
An ***axiom or postulate*** is a proposition that is not proved or demonstrated but considered to be either self-evident, or subject to necessary decision

A ***theorem*** is a statement which has been proved on the basis of previously established statements, such as other theorems, and previously accepted statements, such as axioms.

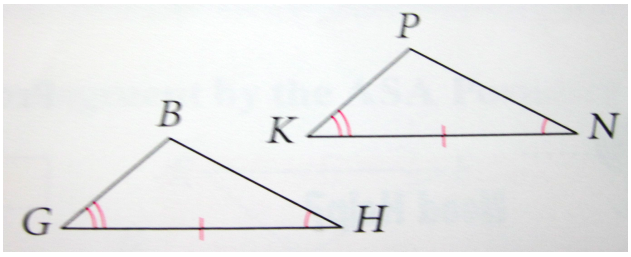
SSS Postulate: If the three sides of a triangle are equal to the three sides of the other triangle, then the two triangles are congruent.



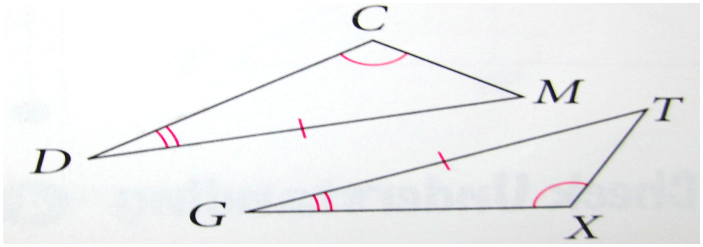
SAS Postulate: If two sides and the included angle of one triangle are equal to two sides and the included angle of the other triangle, then the two triangles are congruent.



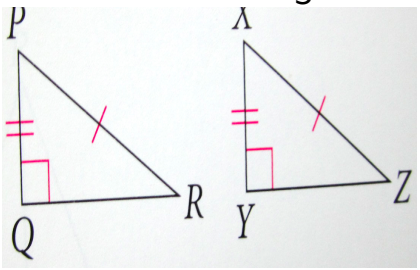
ASA Postulate: If two angles and the included side of one triangle are equal to two angles and the included side of the other triangle, then the two triangles are congruent.



AAS Theorem: If two angles and the non-included side of one triangle are equal to two angles and the non-included side of the other triangle, then the two triangles are congruent.



HL Theorem: If the hypotenuse and a leg of one right triangle are congruent to the hypotenuse and a leg of another right triangle, then the triangles are congruent.



Important facts to remember about transversals & parallel lines:

1) **Corresponding angles are congruent.**
2) Alternate interior angles are congruent.
3) Alternate exterior angles are congruent.
4) The pairs of interior angles on the same side of a transversal are supplementary.