Geometry Info Sheet #12

Transversals, Angles, and Parallel Lines

Definitions

Two coplanar lines are **<u>parallel</u>** if they never intersect.

Two lines are **perpendicular** if they intersect at a 90-degree angle.

Postulates and Theorems

Converse of Corresponding Angles Postulate:	If two lines are cut by a transversal in such a way that <u>corresponding</u> angles are <u>congruent</u> , then the two lines are parallel.
Converse of Alternate Exterior Angles Theorem:	If two lines are cut by a transversal in such a way that <u>alternate exterior</u> angles are <u>congruent</u> , then the two lines are parallel.
Converse of Alternate Interior Angles Theorem:	If two lines are cut by a transversal in such a way that <u>alternate interior</u> angles are <u>congruent</u> , then the two lines are parallel.
Converse of Same-Side Interior Angles Theorem:	If two lines are cut by a transversal in such a way that <u>same-side interior</u> angles are <u>supplementary</u> , then the two lines are parallel.

If two coplanar lines are <u>perpendicular</u> to the same line, then the two lines are <u>parallel</u> to each other.

If two coplanar lines are <u>parallel</u> to the same line, then the two lines are <u>parallel</u> to each other.

If multiple adjacent angles form a line, then the sum of their measures is 180 degrees.

Polygon Interior Angle Sums

The sum of the measures of the interior angles of a convex four-sided polygon is 360 degrees.

The sum of the measures of the interior angles of a convex five-sided polygon is 540 degrees.

The sum of the measures of the interior angles of a convex six-sided polygon is 720 degrees.