# Geometry Info Sheet \#12 

Transversals, Angles, and Parallel Lines

## Definitions

Two coplanar lines are parallel 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 corresponding angles are congruent, 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 alternate exterior angles are congruent, 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 alternate interior angles are congruent, 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 same-side interior angles are supplementary, then the two lines are parallel.

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

