

Theorems Used for the proofs dealing with Parallelograms and Rectangles:

***Alternate Interior Angles:*** If two parallel lines are cut by a transversal, then the alternate interior angles are congruent.

***Reflexive Property:*** A quantity is congruent (equal) to itself.  $a = a$

***SSS:*** If three sides of one triangle are congruent to three sides of another triangle, then the triangles are congruent.

***CPCTC:*** Corresponding parts of congruent triangles are congruent.

***Converse of Alternate Interior Angles:*** If two lines are cut by a transversal and the alternate interior angles are congruent, the lines are parallel.

***ASA:*** If two angles and the included side of one triangle are congruent to the corresponding parts of another triangle, the triangles are congruent.

***Vertical Angles:*** Vertical angles are congruent.

***SAS:*** If two sides and the included angle of one triangle are congruent to the corresponding parts of another triangle, the triangles are congruent.

***Perpendicular lines:*** any two lines that are both perpendicular to a third line are parallel to each other, because of the parallel postulate

***Sum of interior angles in a quadrilateral:***  $180^\circ(n - 2)$