Parallel Lines and Planes

3-1 If two parallel planes are cut by a third plane, then the lines of intersection are parallel. (p. 74)

3-2 If two parallel lines are cut by a transversal, then alternate interior angles are congruent. (p. 78)

3-3 If two parallel lines are cut by a transversal, then same-side interior angles are supplementary. (p. 79)

3-4 If a transversal is perpendicular to one of two parallel lines, then it is perpendicular to the other one also. (p. 79)

3-5 If two lines are cut by a transversal and alternate interior angles are congruent, then the lines are parallel. (p. 83)

3-6 If two lines are cut by a transversal and same-side interior angles are supplementary, then the lines are parallel. (p. 84)

3-7 In a plane two lines perpendicular to the same line are parallel. (p. 84)

3-8 Through a point outside a line, there is exactly one line parallel to the given line. (p. 85)

3-9 Through a point outside a line, there is exactly one line perpendicular to the given line. (p. 85)

3-10 Two lines parallel to a third line are parallel to each other. (p. 85)

3-11 The sum of the measures of the angles of a triangle is 180. (p. 94)

Corollary 1 If two angles of one triangle are congruent to two angles of another triangle, then the third angles are congruent. (p. 94)

Corollary 2 Each angle of an equiangular triangle has measure 60. (p. 94)

Corollary 3 In a triangle, there can be at most one right angle or obtuse angle. (p. 94)

Corollary 4 The acute angles of a right triangle are complementary. (p. 94)

3-12 The measure of an exterior angle of a triangle equals the sum of the measures of the two remote interior angles. (p. 95)

3-13 The sum of the measures of the angles of a convex polygon with n sides is $(n - 2)180$. (p. 102)

3-14 The sum of the measures of the exterior angles of any convex polygon, one angle at each vertex, is 360. (p. 102)

Congruent Triangles

4-1 (**The Isosceles Triangle Theorem**) If two sides of a triangle are congruent, then the angles opposite those sides are congruent. (p. 135)

Corollary 1 An equilateral triangle is also equiangular. (p. 135)

Corollary 2 An equilateral triangle has three 60° angles. (p. 135)

Corollary 3 The bisector of the vertex angle of an isosceles triangle is perpendicular to the base at its midpoint. (p. 135)