**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**October 27th, 2011**

**Geometry, Mrs. Sulkes**

**3.2 Properties of Parallel Lines**

**Corresponding Angle Postulate (CA):**

If two parallel lines are cut by a transversal, then corresponding angles are congruent.

*Prove the following theorems. Draw a labeled diagram, provide the given and prove statements, and then the formal proof. You can use the CA postulate above in your proof.*

**1. Alternate Interior Angle Theorem (AIA)**:

If two parallel lines are cut by a transversal, then alternate interior angles are congruent.

**2. Same-side Interior Angle Theorem (SSIS):**

If two parallel lines are cut by a transversal, then same-side interior angles are supplementary.

**3. Parallel Perpendicular Theorem (PP):**

If a transversal is perpendicular to one of two parallel lines, then it is perpendicular to the other one also.

**Examples:**

1. Find the measures of the angles named:

a. 

b. 

1

2

c. 

4

3

d. 

e. 

5

130

8

6

f. 

7

g. 

h. 