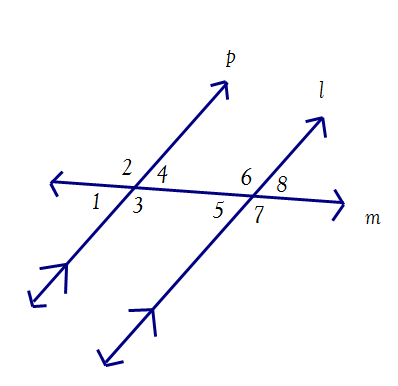
**Proving Angle Relationships and Parallel Lines: Notes**

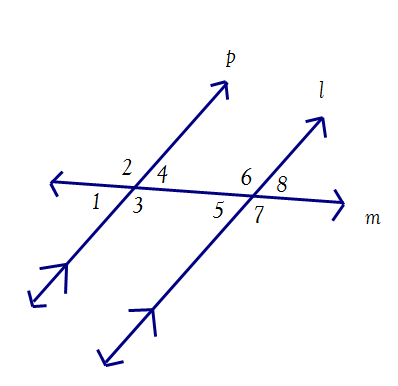
Example 1:

Use Alternate Exterior Angles to prove **Alternate Interior Angles** are Congruent.

**Given:**

p//

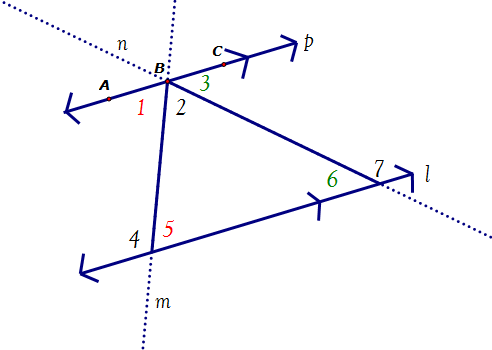
**Prove:**

Example 2.

Prove **Consecutive Interior Angles** are supplementary.

**Given:**  p//

**Prove:**

Example 3:

**Prove the Triangle Sum Theorem**

**(don’t use it in the proof)**

**Given:**

p//**Prove:**

**Corresponding Angles Converse Postulate:**

* If corresponding angles are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ then the lines are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Proof of the Alternate Exterior Angles Converse Theorem:**

* If alternate exterior angles are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ then the lines are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_..

1

2

3

c

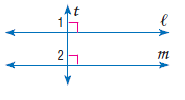
d

Given:

Prove: c

**Proof of:**

* If two lines are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to the same line, then they are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

****

Given:

Prove:

**List of Justifications Up To Chapter 3**

**Vertical angles are \_\_\_\_\_\_\_\_ Linear pairs are \_\_\_\_\_\_\_\_\_**

**\_\_\_\_\_\_\_ lines form \_\_\_\_\_\_\_ Consecutive interior angles**

**\_\_\_\_\_\_\_ lines form \_\_\_\_\_\_\_ Corresponding angles**

**\_\_\_\_\_\_\_ lines form \_\_\_\_\_\_\_ Alternate interior angles**

**\_\_\_\_\_\_\_ lines form \_\_\_\_\_\_\_ Alternate exterior angles**

**\_\_\_\_ Corresponding angles form \_\_\_\_\_ lines**

**\_\_\_\_ Consecutive interior angles form \_\_\_\_\_ lines**

**\_\_\_\_ Alternate Interior angles form \_\_\_\_\_ lines**

**\_\_\_\_ Alternate Exterior angles form \_\_\_\_\_ lines**

**Def of ⊥ Def of Compl Def of Suppl. Def of < bisector**

**Angle addition Segment addition Def of Midpoint**

**Substitution Def. right angle**

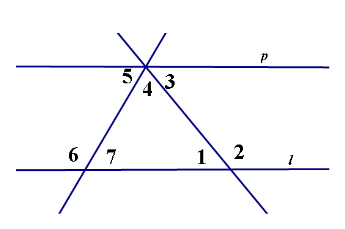
**Angle addition (straight angle) Triangle Sum Theorem**

**Proving Angle Relationships and Parallel Lines:**

**In Class Practice**

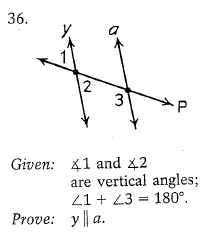
1. Given: <7≅<1 and l // p

Prove: <5≅<3

****

2. Given: <1 and <3 are supplementary

Prove: y || a



**3. Proof of the Consecutive Interior Angles Converse Theorem:**

* If consecutive interior angles are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ then the lines are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

1

2

3

c

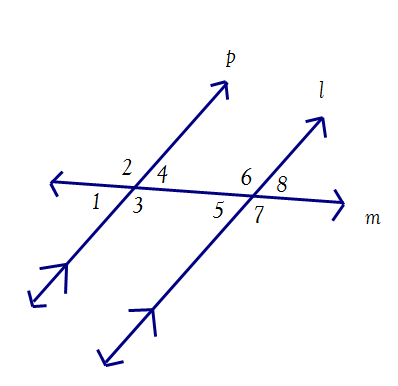
d

Given:

Prove: c

**Proving Angle Relationships and Parallel Lines:**

**Homework**



1. Use Alternate Exterior Angles to prove **Corresponding Angles** are Congruent**.**

**Given:** p//

**Prove:**

**Proof of the Alternate Interior Angles Converse Theorem:**

* If alternate interior angles are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ then the lines are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

1

2

3

c

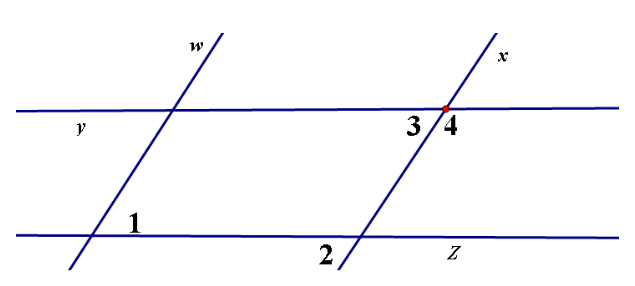
d

Given:

Prove: c

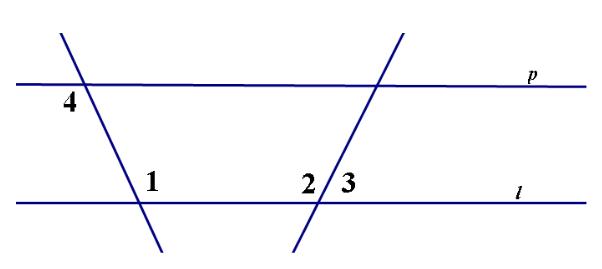
3. Given: w // x and y // z

Prove: <1 and <4 are supplementary



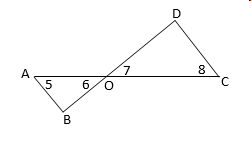
4. Given: <1≅<2 and l // p

Prove: <3 + <4 = 180°



5. **Given:**  and

**Prove:**  



6. **Given:**  and  // 

**Prove: **

