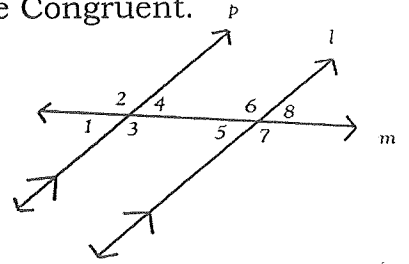


Proving Angle Relationships: Notes

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

Given: $p \parallel l$ and m is a transversal of p and l

Prove: $\angle 4 \cong \angle 5$

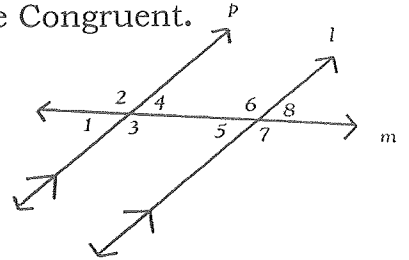


1. $p \parallel l$ and m is a transversal of p and l	1. _____
2. $\angle 1 \cong \angle 8$	2. _____
3. $\angle 1 \cong \angle 4, \angle 8 \cong \angle 5$	3. _____
4. _____	4. Substitution
5. _____	5. _____

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

Given: $p \parallel l$ and m is a transversal of p and l

Prove: $\angle 2 \cong \angle 6$

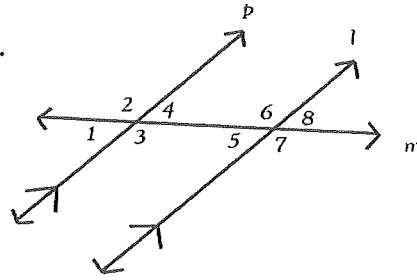


1. $p \parallel l$ and m is a transversal of p and l	1. _____
2. $\angle 2 \cong \angle 7$	2. _____
3. $\angle 7 \cong \angle 6$	3. _____
4. _____	4. _____

Prove **Consecutive Interior Angles** are supplementary.

Given: $p \parallel l$ and m is a transversal of p and l , $\angle 1 \cong \angle 8$

Prove: $\angle 3$ and $\angle 5$ are supplementary



1. $p \parallel l$ and m is a transversal of p and l
 $\angle 1 \cong \angle 8$

1. _____

2. $\angle 1 + \angle 3 = 180$

2. _____

3. $\angle 8 \cong \angle 5$

3. _____

4. _____

4. Substitution

5. _____

5. _____

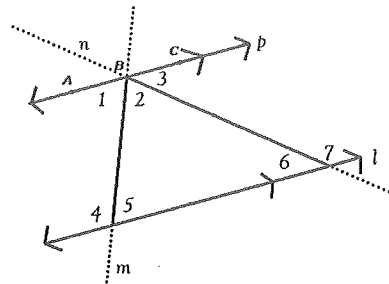
6. _____

6. _____

Prove the **Triangle Sum Theorem**

Given: $p \parallel l$ and m is a transversal of p and l

Prove: $m \angle 5 + m \angle 2 + m \angle 6 = 180$



1. $p \parallel l$ and m is a transversal of p and l

1. _____

2. $\angle 1 + \angle 2 + \angle 3 = 180$

2. _____

3. _____

3. _____

4. _____

4. _____

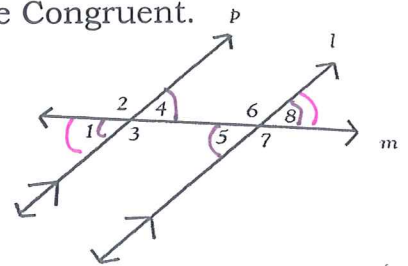
Name: Key

Proving Angle Relationships: Notes

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

Given: $p \parallel l$ and m is a transversal of p and l

Prove: $\angle 4 \cong \angle 5$



1. $p \parallel l$ and m is a transversal of p and l

2. $\angle 1 \cong \angle 8$

3. $\angle 1 \cong \angle 4, \angle 8 \cong \angle 5$

4. $\angle 4 \cong \angle 8$

5. $\angle 4 \cong \angle 5$

1. Given

2. // lines form \cong alt. Ext. \angle s

3. Vertical \angle s are \cong

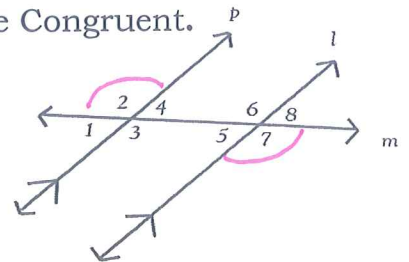
4. Substitution

5. Substitution

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

Given: $p \parallel l$ and m is a transversal of p and l

Prove: $\angle 2 \cong \angle 6$



1. $p \parallel l$ and m is a transversal of p and l

2. $\angle 2 \cong \angle 7$

3. $\angle 7 \cong \angle 6$

4. $\angle 6 \cong \angle 2$

1. Given

2. // lines form \cong alt. Ext. \angle s

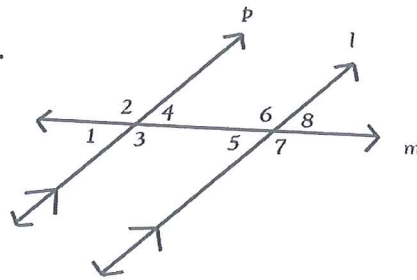
3. Vertical \angle s are \cong

4. Substitution

Prove **Consecutive Interior Angles** are supplementary.

Given: $p \parallel l$ and m is a transversal of p and l , $\angle 1 \cong \angle 8$

Prove: $\angle 3$ and $\angle 5$ are supplementary



1. $p \parallel l$ and m is a transversal of p and l
 $\angle 1 \cong \angle 8$

2. $\angle 1 + \angle 3 = 180$

3. $\angle 8 \cong \angle 5$

4. $\angle 8 + \angle 3 = 180$

5. $\angle 3 + \angle 5 = 180$

6. $\angle 3$ and $\angle 5$ are
 Suppl.

1. Given

2. linear pairs are Suppl.

3. vertical \angle s are \cong

4. Substitution

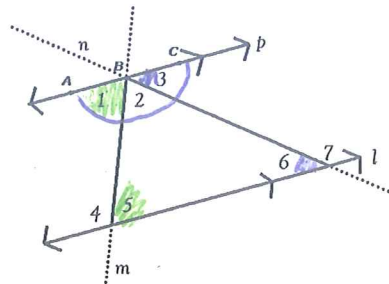
5. substitution

6. def of suppl.

Prove the **Triangle Sum Theorem**

Given: $p \parallel l$ and m is a transversal of p and l

Prove: $m \angle 5 + m \angle 2 + m \angle 6 = 180$



1. $p \parallel l$ and m is a transversal of p and l

2. $\angle 1 + \angle 2 + \angle 3 = 180$

3. $\angle 1 \cong \angle 5$, $\angle 3 \cong \angle 6$

4. $\angle 5 + \angle 2 + \angle 6 = 180$

1. Given

2. angle addition/straight \angle

3. ll lines form \cong alt. int. \angle s

4. substitution