



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

Date: \_\_\_\_\_

Period: \_\_\_\_\_

# 2.5

## Assignment

In Exercises 1 and 2, name the property that the statement illustrates.

1. If  $\overline{PQ} \cong \overline{RS}$ , then  $\overline{RS} \cong \overline{PQ}$ .

2.  $\angle A \cong \angle A$

In the following problems, Complete the two column proof.

1. Given:  $\overline{RT} \cong \overline{SU}$   
 Prove:  $RS = TU$



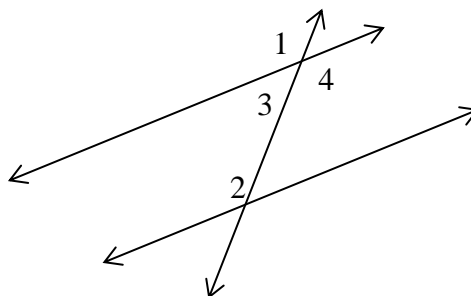
**Plan:** Use the definition of congruent segments to write the given information in terms of lengths. Next use the Segment Addition Postulate to write  $RT$  in terms of  $RS + ST$  and  $SU$  as  $ST + TU$ . Substitute those into the given information and use the Subtraction Property of Equality to eliminate  $ST$  and leave  $RS = TU$ .

Statement	Reason
1. $\overline{RT} \cong \overline{SU}$	
2. $RT = SU$	Definition of _____
3. $RS + ST =$ _____ _____ + _____ = $SU$	_____ postulate
4. $RS + ST = ST + TU$	
5. $\therefore$	_____ property of equality

In Exercises 3-5, write a two-column proof.

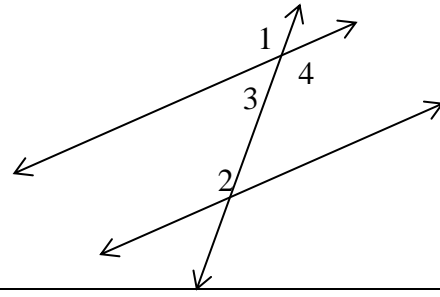
3. Given :  $m\angle 1 = m\angle 2$

Prove:  $m\angle 2 = m\angle 4$



Statement	Reason
1. $m\angle 1 = m\angle 2$	
2.	Vertical angle Theorem
3.	

4. Given :  $m\angle 1 = m\angle 2$   
 Prove:  $m\angle 3 + m\angle 2 = 180^\circ$



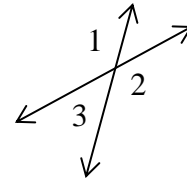
Statement	Reason
1.	
2.	Linear Pair Theorem (Linear Pairs are supplementary)
3.	

5. Prove the Vertical Angle theorem.

**Given :**  $\angle 1$  and  $\angle 2$  are vertical angles.

**Prove:**  $m\angle 1 = m\angle 3$

(you **cannot** use the vertical angle theorem as a reason)



Statement	Reason
1.	Given
2. $m\angle \quad + m\angle \quad = 180^\circ$  $m\angle \quad + m\angle \quad = 180^\circ$	
3.	
4.	