

# Reasoning and Proof – Proving Angles

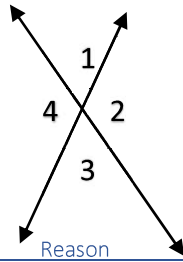
Hw Section 2.4

Name \_\_\_\_\_

1.

Given  $\angle 1$  and  $\angle 2$  form a linear pair  
 $\angle 2$  and  $\angle 3$  form a linear pair

Prove  $\angle 1 \cong \angle 3$



Statement

Reason

a.  $\angle 1$  and  $\angle 2$  are linear pair  
 $\angle 2$  and  $\angle 3$  are linear pair

a. GIVEN

b.  $\angle 1$  and  $\angle 2$  are Supplementary  
 $\angle 2$  and  $\angle 3$  are Supplementary

b. Supplement Th'm

c.  $\angle 1 \cong \angle 3$

c. Two angles supplementary to the same angle are congruent

d.

d.

e.

e.

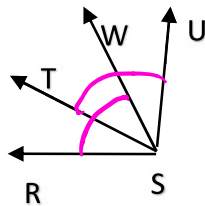
f.

f.

2.

Given  $m\angle RSW = m\angle TSU$

Prove  $m\angle RST = m\angle WSU$



Statement

Reason

a.  $m\angle RSW = m\angle TSU$

a. GIVEN

b.  $m\angle RSW = m\angle RST + m\angle TSW$   
 $m\angle TSU = m\angle TSW + m\angle WSU$

b. Angle Add'n Postulate

c.  $m\angle RST + m\angle TSW = m\angle TSW + m\angle WSU$

c. Substitution PoE

d.  $m\angle RST = m\angle WSU$

d. Subtraction PoE

e.

e.

f.

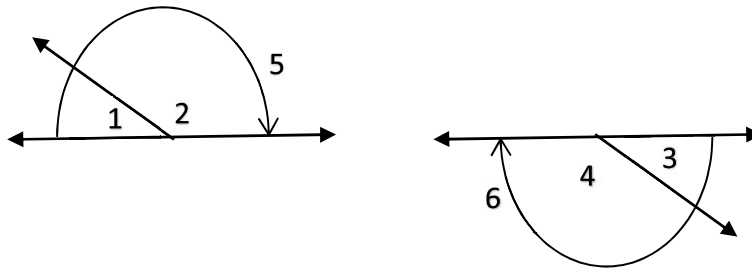
f.

## Reasoning and Proof – Proving Angles

Hw Section 2.4

Name \_\_\_\_\_

3.

Given  $\angle 1 \cong \angle 3$ Prove  $\angle 2 \cong \angle 4$ 

Statement

Reason

- |    |  |    |                           |
|----|--|----|---------------------------|
| a. | $\angle 1 \cong \angle 3$  | a. | Given                     |
| b. | $m\angle 1 = m\angle 3$  | b. | Def'n of $\cong \angle$ s |
| c. | $\angle 1$ and $\angle 2$ are linear pair<br>$\angle 3$ and $\angle 4$ are linear pair     | c. | Def'n of linear pair      |
| d. | $\angle 1$ and $\angle 2$ are Supplementary<br>$\angle 3$ and $\angle 4$ are Supplementary | d. | Supplement Th'm           |
| e. | $m\angle 1 + m\angle 2 = 180^\circ$<br>$m\angle 3 + m\angle 4 = 180^\circ$                 | e. | Def'n of Supplementary    |
| f. | $m\angle 1 + m\angle 2 = m\angle 3 + m\angle 4$  | f. | Substitution PoE          |
| g. | $m\angle 3 + m\angle 2 = m\angle 3 + m\angle 4$  | g. | Substitution PoE          |
| h. | $m\angle 2 = m\angle 4$  | h. | Subtraction PoE           |
| i. | $\angle 2 \cong \angle 4$  | i. | Def'n of $\cong \angle$ s |