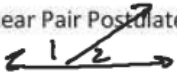


# Proofs Using Lines Parallel

Linear Pair Postulate



$$m\angle 1 + m\angle 2 = 180$$

Definition of Perpendicular Lines.

Lines that intersect to form Right Angles



Right Angle

Angle that measures  $90^\circ$

All right  $\angle$ 's are  $\cong$ .

Reflexive property  
Something is  $\cong$  to itself

$$\angle A \cong \angle A \quad \overline{XY} \cong \overline{XY}$$

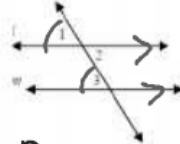
Substitution property  
Replace with equivalent object

## Parallel Lines Proof Worksheet

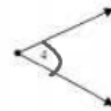
Name \_\_\_\_\_

Write a 2 column or flow proof on your own paper.

1. Given:  $l \parallel m$ ;  $\angle 2 \cong \angle 4$   
Prove:  $\angle 4 \cong \angle 3$



2. Given:  $l \parallel m$ ;  $\angle 1 \cong \angle 4$   
Prove:  $\angle 3 \cong \angle 4$



Statement	Reason	Statement	Reason
1) $l \parallel m$ $\angle 2 \cong \angle 4$	1) Given	1) $l \parallel m$ $\angle 1 \cong \angle 4$	1) Given
2) $\angle 2 \cong \angle 3$	2) Alternate Interior $\angle$ 's $\cong$ .	2) $\angle 1 \cong \angle 3$	2) Corresponding $\angle$ 's $\cong$
3) $\angle 4 \cong \angle 3$	3) Substitution prop.	3) $\angle 3 \cong \angle 4$	3) Substitution

3. Given:  $j \parallel k$ ,  $k \parallel l$   
Prove:  $\angle 1 \cong \angle 3$



4. Given:  $j \parallel k$ ,  $k \parallel l$   
Prove:  $\angle 1 \cong \angle 6$

Statement	Reason	Statement	Reason
1) $j \parallel k$ , $k \parallel l$	1) Given	1) $j \parallel k$ , $k \parallel l$	1) Given
2) $\angle 1 \cong \angle 2$ $\angle 2 \cong \angle 3$	2) Corresponding $\angle$ 's $\cong$		
3) $\angle 1 \cong \angle 3$	3) Substitution prop.		