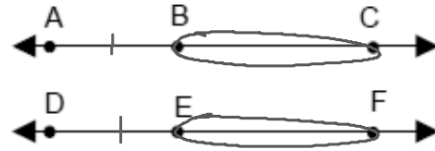


Example 2: Write a two-column proof.

Given:  $\overline{AC} \cong \overline{DF}$  and  $\overline{AB} \cong \overline{DE}$

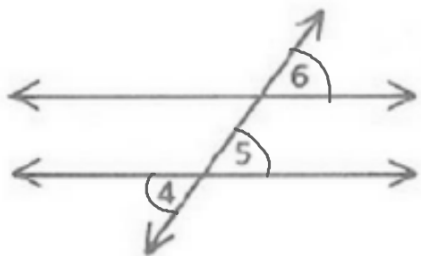
Prove:  $\overline{BC} \cong \overline{EF}$



Statement	Reason
1) $\overline{AC} \cong \overline{DF}$ $\overline{AB} \cong \overline{DE}$	1) Given
2) $AB + BC = AC$ $DE + EF = DF$	2) Segment Add post
3) $AB + EF = DF$	3) Substitution prop.
4) $\overset{(AC)}{AB + BC} = \overset{(DF)}{AB + EF}$	4) Substitution prop.
5) $BC = EF$	5) Subtraction prop.
6) $\overline{BC} \cong \overline{EF}$	6) Def of $\cong$ Segments.

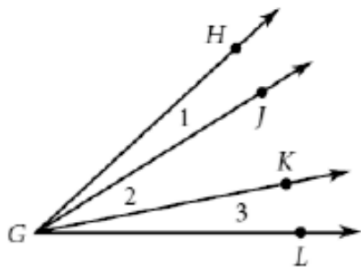
Given:  $\angle 4 \cong \angle 6$

Prove:  $\angle 5 \cong \angle 6$



Statement	Reason
1) $\angle 4 \cong \angle 6$	1) Given
2) $\angle 4 \cong \angle 5$	2) Vertical $\angle$ 's $\cong$
3) $\angle 5 \cong \angle 6$	3) Substitution prop.

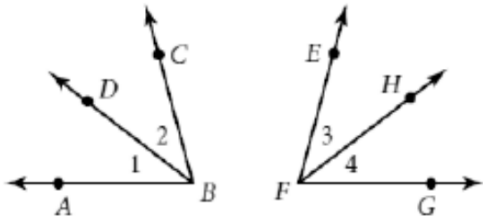
Given:  $m\angle HGK = m\angle JGL$   
 Prove:  $m\angle 1 = m\angle 3$



(4-6 Steps)

Statement	Reason
1) $m\angle HGK = m\angle JGL$	1) Given
2) $m\angle HGK = m\angle 1 + m\angle 2$ $m\angle JGL = m\angle 2 + m\angle 3$	2) Angle Add post
3) $m\angle 1 + m\angle 2 = m\angle 2 + m\angle 3$	3) Substitution prop.
4) $m\angle 1 = m\angle 3$	4) Subtraction prop.

Given:  $\angle ABC \cong \angle EFG$   
 $\angle 1 \cong \angle 3$   
 Prove:  $\angle 2 \cong \angle 4$



Statement	Reason
1) $\angle ABC \cong \angle EFG$ $\angle 1 \cong \angle 3$	1) Given
2) $m\angle ABC = m\angle 1 + m\angle 2$ $m\angle EFG = m\angle 3 + m\angle 4$	2) Angle Add Post.
3) $m\angle 1 + m\angle 2 = m\angle 3 + m\angle 4$	3) Substitution prop
4) $m\angle 2 = m\angle 4$	4) Subtraction prop
5) $\angle 2 \cong \angle 4$	5) Definition of $\cong \angle$ .