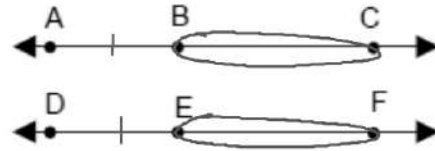


Example 2: Write a two-column proof.

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

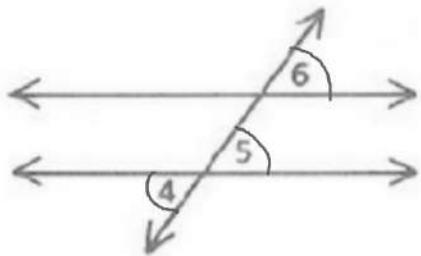
Prove: $\overline{BC} \cong \overline{EF}$



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.

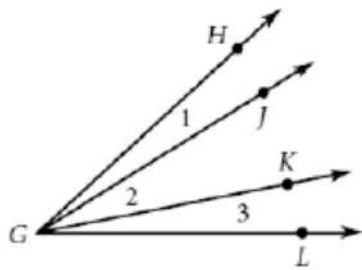
Given: $\angle 4 \cong \angle 6$

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.

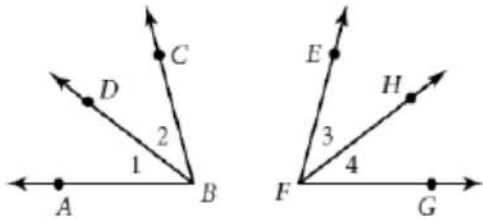
Given: $m\angle HGK = m\angle JGL$
 Prove: $m\angle 1 = m\angle 3$



(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 $\cong \angle$.