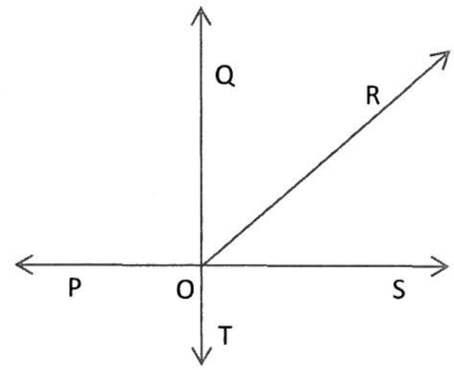
Given: $< POT \ and \ < TOS$ are linear pair;

$< POT \cong < TOS$

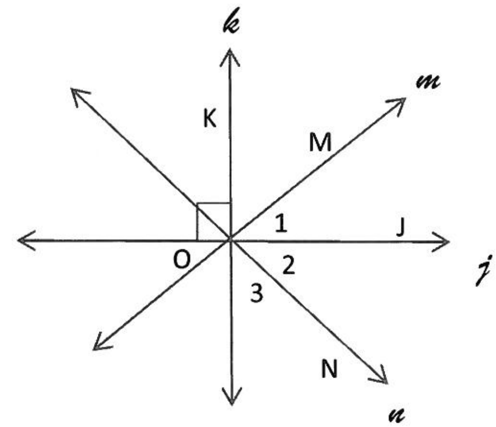
Prove: $< QOR \ and \ < ROS$ are complementary



STATEMENTS	REASONS
$< POT \ and \ < TOS$ are linear pair; $< POT \cong < TOS$	Given
$\overleftrightarrow{PS} \perp \overleftrightarrow{QT}$	Linear Pair Perpendicular Theorem
$m < QOR + m < ROS = < QOS$	Angle Addition Postulate
$< QOR \ and \ < ROS$ are complementary	If two acute angles have sides that are perpendicular, the angles are complementary.

Given: $j \perp k$; $< 1 \cong < 3$

Prove: $m \perp n$



STATEMENTS	REASONS
$j \perp k$; $< 1 \cong < 3$	Given
$m < 2 + m < 3 = < JON$	Angle Addition Postulate
< 2 *and* < 3 are complementary	If two acute angles have sides that are perpendicular, the angles are complementary.
< 1 *and* < 2 are complementary	Congruent Complements Theorem
$m \perp n$	If two acute angles are complementary, their sides are perpendicular.

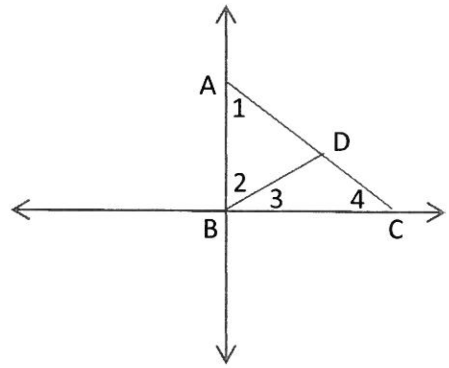
Given: $\angle 1$ and $\angle 2$ are complementary;

$< 1 \, and \, < 2$ are complementary;

$< 1 \, and \, < 4$ are complementary;

$< 4 \, and \, < 3$ are complementary

Prove: $\overleftrightarrow{AB} \perp \overleftrightarrow{BC}$



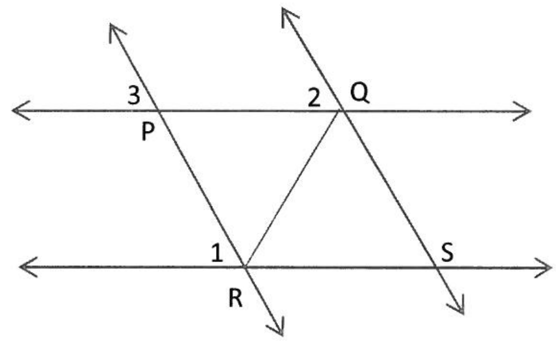
STATEMENTS	REASONS
$< 1 \, and \, < 2$ are complementary; $< 1 \, and \, < 4$ are complementary; $< 4 \, and \, < 3$ are complementary	Given
$m < 1 + m < 2 = 90$ $m < 1 + m < 4 = 90$ $m < 4 + m < 3 = 90$	Definition of Complementary Angles
$< 2 \cong < 4$ $< 1 \cong < 3$	Congruent Complements Theorem
$m < 2 = m < 4$ $m < 1 = m < 3$	Definition of Congruent Angles
$m < 2 + m < 3 = 90$	Substitution Property of Equality

$< 2\ and\ < 3$ are complementary	Definition of Complementary Angles
$\overleftrightarrow{AB} \perp \overleftrightarrow{BC}$	If two acute angles are complementary, their sides are perpendicular.

Given: $\overleftrightarrow{PR} \parallel \overleftrightarrow{QS}$;

$< 1 \cong < 2$

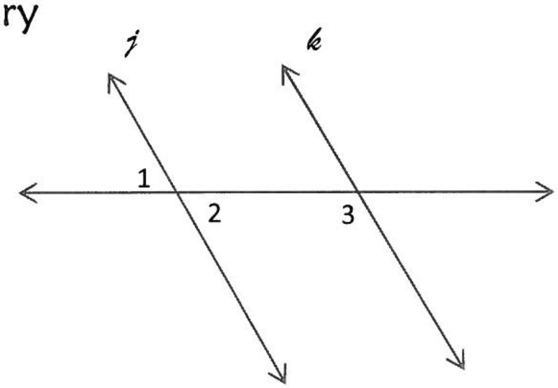
Prove: $\overleftrightarrow{PQ} \parallel \overleftrightarrow{RS}$



STATEMENTS	REASONS
$\overleftrightarrow{PR} \parallel \overleftrightarrow{QS}$	Given
$< 2 \cong < 3$	Corresponding Angles Theorem
$< 1 \cong < 2$	Given
$< 1 \cong < 3$	Transitive Property of $\cong$
$\overleftrightarrow{PQ} \parallel \overleftrightarrow{RS}$	Converse of Corresponding Angles Theorem

Given: < 1 *and* < 3 are supplementary

Prove: $j \parallel k$



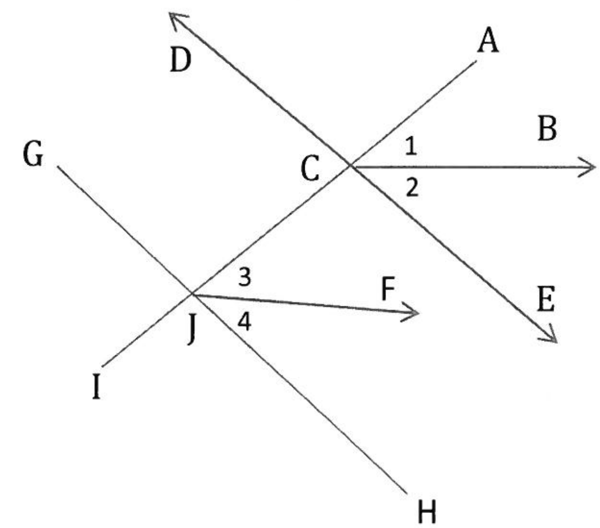
STATEMENTS	REASONS
< 1 *and* < 3 are supplementary	Given
< 1 *and* < 2 are vertical angles	Definition of Vertical Angles
$< 1 \cong < 2$	Vertical Angles Postulate
< 2 *and* < 3 are supplementary	Congruent Supplements Theorem
$j \parallel k$	Consecutive Interior Angles Theorem

Given: $\overrightarrow{CB}$ bisects $< ACE$;

$\overrightarrow{JF}$ bisects $< AJH$;

$\overleftrightarrow{DE} \mid\mid \overleftrightarrow{GH}$

Prove: $\overrightarrow{CB} \mid\mid \overrightarrow{JF}$



STATEMENTS	REASONS
$\overrightarrow{CB}$ bisects $< ACE$; $\overrightarrow{JF}$ bisects $< AJH$	Given
$< 1 \cong < 2$ $< 3 \cong < 4$	Definition of Angle Bisector
$\overleftrightarrow{DE} \mid\mid \overleftrightarrow{GH}$	Given
$< ACE \cong < AJH$	Corresponding Angles Theorem
$m < 1 + m < 2 =< ACE$ $m < 3 + m < 4 =< AJH$	Angles Addition Postulate
$< 1 \cong < 3$	Transitive Property of $\cong$

$\overrightarrow{CB} \parallel \overrightarrow{JF}$	Corresponding Angles Theorem