$\angle 1 \cong \angle 2$	Definition of vertical angles
$m\angle 1 + m\angle 3 = 180°$	Transitive Property of Equality
$m\angle 2 + m\angle 4 = 180°$	Substitution Property of Equality
$m\angle 3 = m\angle 4$	Subtraction Property of Equality
$m\angle 1 = m\angle 2$	Definition of congruent angles
$m\angle 1 + m\angle 3 = m\angle 2 + m\angle 4$	$\angle 2$ is supplementary to $\angle 4$
$m\angle 1 + m\angle 3 = m\angle 2 + m\angle 3$	$\angle 1$ is supplementary to $\angle 3$
Given	Definition of supplementary angles
Given	Definition of supplementary angles
Given by the diagram	$\angle 3$ and $\angle 4$ are vertical angles