

Name: _____

Different Methods of Proof

Justification Using Properties of Equality and Congruence (Continued)

State the property of equality or property of congruence that justifies each conclusion.

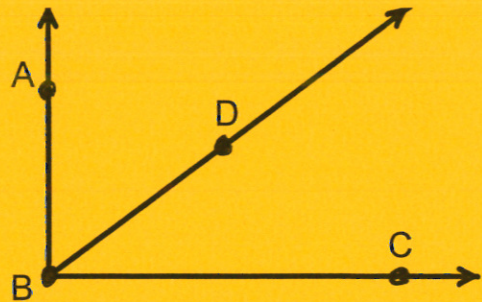
- Given: $m\angle 1 = m\angle 2$
 $m\angle 2 = 75$
Conclusion: $m\angle 1 = 75$ _____
- Given: $\overline{EG} \cong \overline{FG}$
 $\overline{FG} \cong \overline{GH}$
Conclusion: $\overline{EG} \cong \overline{GH}$ _____
- Given: $x + 9 = 13$
Conclusion: $x = 4$ _____
- Given: $JK = KL$
 $MN = KL$
Conclusion: $JK = MN$ _____
- Given: $7x = 63$
Conclusion: $x = 9$ _____
- Given: $m\angle 3 = 65$
 $m\angle 4 = 65$
Conclusion: $m\angle 3 + m\angle 4 = 130$ _____
- Given: $\angle 1 \cong \angle 2$
 $\angle 2 \cong \angle 3$
Conclusion: $\angle 1 \cong \angle 3$ _____
- Given: \overline{XY} is a segment
Conclusion: $\overline{XY} \cong \overline{XY}$ _____
- Given: $2x + y = 70$
 $y = 3x$
Conclusion: $2x + 3x = 70$ _____
- Given: $\angle A \cong \angle B$
Conclusion: $\angle B \cong \angle A$ _____

11. Given: $PR = QS$
 Prove: $PQ = RS$



Statement	Reason
$PR = QS$	
$PR = PQ + QR$	
$QS = QR + RS$	
$PQ + QR = QR + RS$	
$PQ = RS$	

12. Given: $\angle ABD$ and $\angle DBC$ are complementary
 Prove: $\angle ABC$ is a right angle



Statement	Reason
$\angle ABD$ and $\angle DBC$ are complementary	
$\angle ABD + \angle DBC = \angle ABC$	
$m \angle ABD + m \angle DBC = 90^\circ$	
$m \angle ABC = 90^\circ$	
$\angle ABC$ is a right angle	