Name Key Date _____ Pd _____

CYU 2.6 Geometric Reasoning DAY TWO Basic Proofs

☑ *Use when you get it right all by yourself*

S *Use when you did it all by yourself, but made a silly mistake*

H *Use when you could do it alone with a little help from teacher or peer*

G *Use when you completed the problem in a group*

X *Use when a question was attempted but wrong (get help)*

N *Use when a question was not even attempted*

CONCEPTS	BASIC	INTERMEDIATE	ADVANCED
Given	1 - 6		
If ≅, then =. Or If =, then ≅.	1, 6		
Transitive POE/POC	1		
Symmetric POE/POC	1		
Segment/Angle Addition Postulate		4, 5	
Def. of Complementary/Supplementary Angles	2, 3	6	
Def. of vertical angles		6	
Def. of Perpendicular Segments/Lines	2		
Substitution POE		4, 5, 6	
Commutative POE		4	
Addition/Subtraction POE/POC		5	

1) Given: $\angle 1 \cong \angle 2$

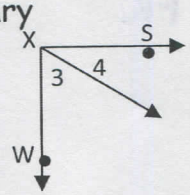
$\angle 4 \cong \angle 2$

Prove: $\angle 1 \cong \angle 4$

Statements	Reasons
1. $\angle 1 \cong \angle 2; \angle 4 \cong \angle 2$	1. Given
2. $m\angle 4 = m\angle 2$	2. If $\cong \Rightarrow =$.
3. $m\angle 2 = m\angle 4$	3. Symmetric POE
4. $\angle 2 \cong \angle 4$	4. If $= \Rightarrow \cong$
5. $\angle 1 \cong \angle 4$	5. Transitive POC

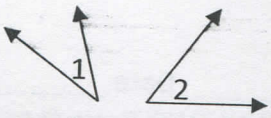
2) Given: $\overline{SX} \perp \overline{WX}$

Prove: $\angle 3$ & $\angle 4$ are complementary



Statements	Reasons
1. $\overline{SX} \perp \overline{WX}$	1. Given
2. $m\angle 3 + m\angle 4 = 90°$	2. Def. of ⊥ segments
3. $\angle 3$ & $\angle 4$ R complementary	3. Def of complementary ∠'s

3) Given: $\angle 1$ & $\angle 2$ are complementary.

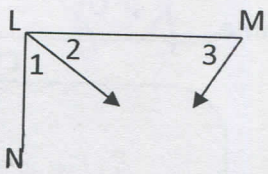


Prove: m $\angle 1$ + m $\angle 2$ = 90°

Statements	Reasons
1. $\angle 1$ & $\angle 2$ R complementary	1. Given
2. $m\angle 1 + m\angle 2 = 90°$	2. Def of complementary

4) Given: $m\angle NLM = 90°$, $m\angle 1 = m\angle 3$

Prove: $m\angle 2 + m\angle 3 = 90°$



Statements	Reasons
1. $m\angle NLM = 90°$, $m\angle 1 = m\angle 3$	1. Given
2. $m\angle 1 + m\angle 2 = m\angle NLM$	2. Angle Add. Post.
3. $m\angle 1 + m\angle 2 = 90°$	3. Substitution POE
4. $m\angle 3 + m\angle 2 = 90°$	4. Substitution POE
5. $m\angle 2 + m\angle 3 = 90°$	5. Commutative POA

5) Given: Q is between F & R

FQ = 12

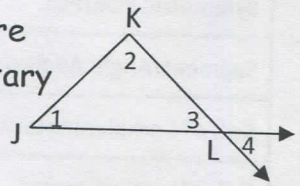
QR = 8

Prove: 20 = FR

Statements	Reasons
1. Q is btwn F & R; FQ = 12; QR = 8	1. Given
2. $\overline{FQ} + \overline{QR} = \overline{FR}$	2. Seg. Add. Post.
3. 12 + 8 = FR	3. Substitution POE
4. 20 = FR	4. Add. POE CLT/Simplify

6) Given: m $\angle 1$ + m $\angle 3$ = 90°

Prove: $\angle 1$ & $\angle 4$ are complementary



Statements	Reasons
1. m $\angle 1$ + m $\angle 3$ = 90°	1. Given
2. $\angle 3 \cong \angle 4$	2. Def of vert. $\angle$'s
3. $m\angle 3 = m\angle 4$	3. If $\cong \Rightarrow =$.
4. m $\angle 1$ + m $\angle 4$ = 90°	4. Substitution POE
5. $\angle 1$ and $\angle 4$ are complementary	5. Def of complementary

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CYU Reflection: *How far can you go: basic, intermediate, or advanced?*

Rate your mastery level!

How confident are you with the skills this CYU covered? Circle the score you would give yourself.