

CYU 2.5 & 2.6 Reasoning in Proofs DAY THREE

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 - 12		
Transitive POE/POC	1, 2, 4 - 7		
Symmetric POE/POC	1, 2, 5, 6		
Segment/Angle Addition Postulate		8, 11	
Def. of Complementary/Supplementary Angles	3, 9		
Def. of vertical angles	5, 6		
Def. of Perpendicular Segments/Lines	9		
Substitution POE		8, 10, 11	
Def. of midpoint	4	7	
Def. of equilateral triangle	6	12	
Def. of linear pair	10	10	
Addition/ Subtraction POE/POC	10		
Simplify or Combine Like Terms (CLT)	8		

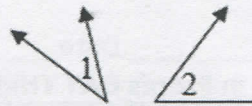
1) Given: $\angle 1 \cong \angle 3$
 $\angle 5 \cong \angle 3$
 Prove: $\angle 1 \cong \angle 5$

Statements	Reasons
1. $\angle 1 \cong \angle 3$ $\angle 5 \cong \angle 3$	1. <u>Given</u>
2. $\angle 3 \cong \angle 5$	2. <u>Symmetric POC</u>
3. $\angle 1 \cong \angle 5$	3. <u>Transitive POC</u>

2) Given: $\overline{PQ} \cong \overline{RS}$
 $\overline{QR} \cong \overline{RS}$
 Prove: $\overline{PQ} \cong \overline{QR}$

Statements	Reasons
1. $\overline{PQ} \cong \overline{RS}$ $\overline{QR} \cong \overline{RS}$	1. <u>Given</u>
2. $\overline{RS} \cong \overline{QR}$	2. <u>Symmetric POC</u>
3. $\overline{PQ} \cong \overline{QR}$	3. <u>Transitive POC</u>

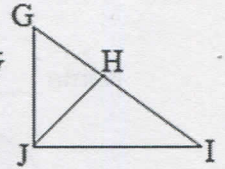
3) Given: $m\angle 1 = 35^\circ$
 $m\angle 2 = 55^\circ$



Prove: $\angle 1$ & $\angle 2$ are complementary.

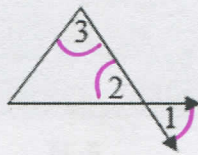
Statements	Reasons
1. $m\angle 1 = 35^\circ$ $m\angle 2 = 55^\circ$	1. <u>Given</u>
2. $m\angle 1 + m\angle 2 = 90$	2. <u>∠ Add. Post.</u>
3. $\angle 1$ & $\angle 2$ are complementary	3. <u>Def. of comp. ∠'s</u>

4) Given: H is the midpoint of \overline{GI}
 $\overline{HI} \cong \overline{HJ}$
 Prove: $\overline{GH} \cong \overline{HJ}$



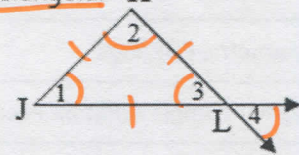
Statements	Reasons
1. $\overline{HI} \cong \overline{HJ}$ H is midpt of \overline{GI}	1. <u>Given</u>
2. $\overline{GH} \cong \overline{HI}$	2. <u>Def. of midpoint</u>
3. $\overline{GH} \cong \overline{HJ}$	3. <u>Transitive POC</u>

5) Given: $\angle 3 \cong \angle 2$
 Prove: $\angle 3 \cong \angle 1$



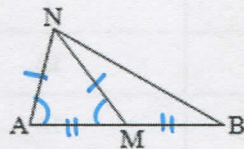
Statements	Reasons
1. $\angle 3 \cong \angle 2$	1. <u>Given</u>
2. $\angle 1 \cong \angle 2$	2. <u>Def. of vertical ∠'s</u>
3. $\angle 2 \cong \angle 1$	3. <u>Symmetric POC</u>
4. $\angle 3 \cong \angle 1$	4. <u>Transitive POC</u>

6) Given: $\triangle JKL$ is equiangular K
 Prove: $\angle 4 \cong \angle 1$



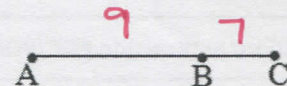
Statements	Reasons
1. $\triangle JKL$ is Equiangular	1. <u>Given</u>
2. $\angle 1 \cong \angle 3$	2. <u>Def. of equiangular \triangle</u>
3. $\angle 3 \cong \angle 4$	3. <u>Def. of vertical ∠'s</u>
4. $\angle 1 \cong \angle 4$	4. <u>Transitive POC</u>
5. $\angle 4 \cong \angle 1$	5. <u>Symmetric POC</u>

7) Given: $\overline{NA} \cong \overline{AM}$
 M is the midpoint of \overline{AB}
 Prove: $\overline{NA} \cong \overline{MB}$



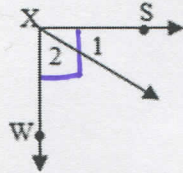
Statements	Reasons
1. $\overline{NA} \cong \overline{AM}$ M is midpt of \overline{AB}	1. <u>Given</u>
2. $\overline{AM} \cong \overline{MB}$	2. <u>Def of midpoint</u>
3. $\overline{NA} \cong \overline{MB}$	3. <u>Transitive POC</u>

8) Given: B is between A & C
 $AB = 9$
 $BC = 7$
 Prove: $16 = AC$

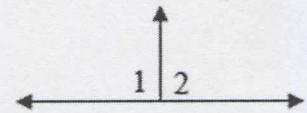


Statements	Reasons
1. B is between A & C $AB = 9$ $BC = 7$	1. <u>Given</u>
2. $AB + BC = AC$	2. <u>Seg. Add. Post.</u>
3. $9 + 7 = AC$	3. <u>Substitution POE</u>
4. $16 = AC$	4. <u>CLT/simplify</u>

9) Given: $\angle 1$ & $\angle 2$ are complementary
 Prove: $\overline{SX} \perp \overline{WX}$



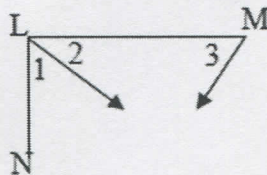
10) Given: $m\angle 2 = 90^\circ$
 Prove: $m\angle 1 = 90^\circ$



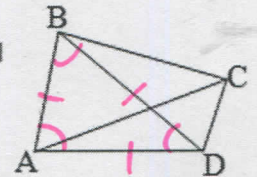
Statements	Reasons
1. $\angle 1$ & $\angle 2$ are complementary	1. <u>Given</u>
2. $\angle WXS$ is right	2. <u>Def of comp. \angle's</u>
3. $\overline{SX} \perp \overline{WX}$	3. <u>If \angle's $\Rightarrow \perp$</u>

Statements	Reasons
1. $m\angle 2 = 90^\circ$	1. <u>Given</u>
2. $\angle 1$ & $\angle 2$ form a linear pair	2. <u>Def. of linear pair</u>
3. $m\angle 1 + m\angle 2 = 180$	3. <u>Def of linear pair</u>
4. $m\angle 1 + 90 = 180$	4. <u>Substitution POE</u>
5. $m\angle 1 = 90^\circ$	5. <u>Substitution POE</u>

11) Given: $m\angle NLM = 90^\circ$
 $m\angle 1 = m\angle 3$
 Prove: $m\angle 3 + m\angle 2 = 90^\circ$



12) Given: $\triangle ABD$ is equilateral
 $\overline{BD} \cong \overline{BC}$
 Prove: $\overline{AB} \cong \overline{BC}$



Statements	Reasons
1. $m\angle NLM = 90^\circ$ $m\angle 1 = m\angle 3$	1. <u>Given</u>
2. $m\angle 1 + m\angle 2 = m\angle NLM$	2. <u>\angle Add. Post.</u>
3. $m\angle 1 + m\angle 2 = 90^\circ$	3. <u>Substitution POE</u>
4. $m\angle 3 + m\angle 2 = 90^\circ$	4. <u>Substitution POE</u>

Statements	Reasons
1. $\triangle ABD$ is equilateral $\overline{BD} \cong \overline{BC}$	1. <u>Given</u>
2. $\overline{AB} \cong \overline{BD}$	2. <u>Def of equilateral</u>
3. $\overline{AB} \cong \overline{BC}$	3. <u>Transitive Prop of \cong</u>

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.

