Name Key Date Pd

CYU 2.6 Geometric Reasoning DAY ONE

☑ *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*

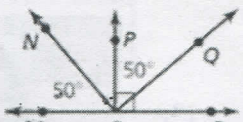
X *Use when a question was attempted but wrong (get help)*

N *Use when a question was not even attempted*

CONCEPTS	BASIC	INTERMEDIATE	ADVANCED
Addition/Subtraction POE/POC	1, 3	3, 6, 7	3, 8
Multiplication/Division POE/POC	3	3	3
Substitution POE		7	8
Transitive POE/POC		6, 7	4, 8
Def. of Complementary/Supplementary Angles	2	3, 5, 7	3, 6, 8
Def. of Complement/Supplement	1	3, 5, 7	3, 6
Def. of Congruent Angles/Segments	1, 2	3, 5, 7	3, 6, 8
Def. of Linear Pairs/Def. of Vertical Angles	1, 2	3	3, 4, 8

1. Identify the pair(s) of congruent angles in the figures. Explain how you know they are congruent.

a.



∠MSN ≅ ∠PSQ Def of ≅

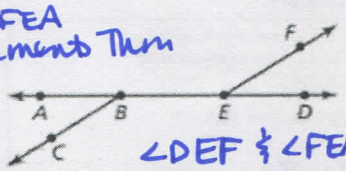
∠MSP ≅ ∠PSR Def of Rt ∡'s

∠NSP ≅ ∠QSR ≅ Complements

b. ∠ABC is supplementary to ∠CBD. ∠CBD is supplementary to ∠DEF.

∠ABC ≅ ∠DEF ≅ Supplements Thm

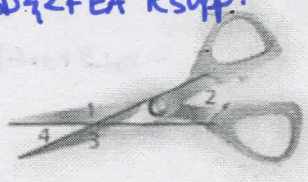
∠CBD ≅ ∠FEA ≅ Supplements Thm



∠DEF & ∠FEA R supp. Linear pair

∠CBD & ∠FEA R supp. ≅

2. Use the diagram and the given angle measure to find the other three measures.



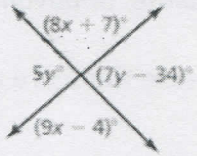
a. m∠1 = 143° m∠2=37°, m∠3=143°, m∠4=37°

b. m∠3 = 159° m∠1=159°, m∠2=21°, m∠4=21°

c. m∠2 = 34° m∠1=146°, m∠3=146°, m∠4=34°

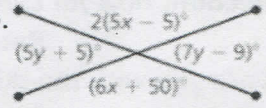
3. Find the values of x and y.

a.



x=11
y=17

b.

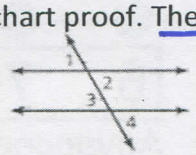


x=15
y=7

4. Complete the flowchart proof. Then transfer it into a two-column proof.

Given ∠1 ≅ ∠3

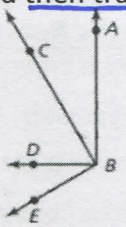
Prove ∠2 ≅ ∠4



5. Complete the two-column proof and then transfer it into a paragraph proof.

Given $\angle ABD$ is a right angle.
$\angle CBE$ is a right angle.

Prove $\angle ABC \cong \angle DBE$

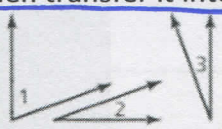


STATEMENTS	REASONS
1. $\angle ABD$ is a right angle. $\angle CBE$ is a right angle.	1. given
2. $\angle ABC$ and $\angle CBD$ are complementary.	2. Definition of complementary angles
3. $\angle DBE$ and $\angle CBD$ are complementary.	3. Def. of complementary ∠'s
4. $\angle ABC \cong \angle DBE$	4. ≅ Complements Thm

6. Complete the paragraph proof and then transfer it into a two-column proof.

Given $\angle 1$ and $\angle 2$ are complementary.
$\angle 1$ and $\angle 3$ are complementary.

Prove $\angle 2 \cong \angle 3$



$\angle 1$ and $\angle 2$ are complementary, and $\angle 1$ and $\angle 3$ are complementary. By the definition of complementary angles, $m\angle 1 + m\angle 2 = 90^\circ$ and $m\angle 1 + m\angle 3$ $= 90^\circ$. By the Transitive POE, $m\angle 1 + m\angle 2 = m\angle 1 + m\angle 3$. By the Subtraction Property of Equality, $m\angle 2 = m\angle 3$. So, $\angle 2 \cong \angle 3$ by the definition of ≅ ∠'s (or. if = ⇒ ≅.)

7. Complete the two-column proof.

Given $\angle 1$ and $\angle 2$ are supplementary.
$\angle 3$ and $\angle 4$ are supplementary.
$\angle 1 \cong \angle 4$

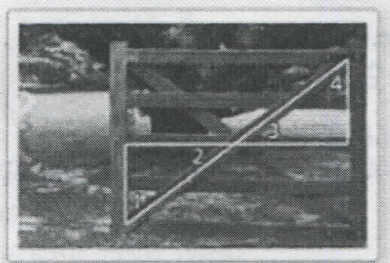
Prove $\angle 2 \cong \angle 3$

STATEMENTS	REASONS
1. $\angle 1$ and $\angle 2$ are supplementary. $\angle 3$ and $\angle 4$ are supplementary. $\angle 1 \cong \angle 4$	1. Given
2. $m\angle 1 + m\angle 2 = 180^\circ$, $m\angle 3 + m\angle 4 = 180^\circ$	2. Def of Supplementary ∠'s
3. $m\angle 1 + m\angle 2 = m\angle 3 + m\angle 4$	3. Transitive Property of Equality
4. $m\angle 1 = m\angle 4$	4. Definition of congruent angles
5. $m\angle 1 + m\angle 2 =$ $m\angle 3 + m\angle 1$	5. Substitution Property of Equality
6. $m\angle 2 = m\angle 3$	6. Subtraction POE
7. $\angle 2 \cong \angle 3$	7. if = ⇒ ≅ (Def. of ≅ ∠'s)

8. Write a proof using any format.

Given $\angle 1$ and $\angle 3$ are complementary.
$\angle 2$ and $\angle 4$ are complementary.

Prove $\angle 1 \cong \angle 4$

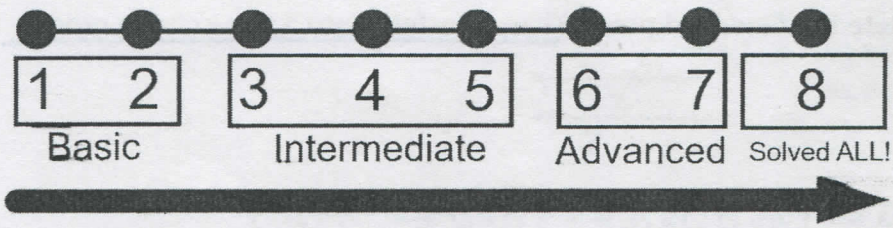


extra paper

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.



8.

Statements	Reasons
1. $\angle 1 \not\cong \angle 3$ AND $\angle 2 \not\cong \angle 4$ are complementary	1. Given
2. $m\angle 1 + m\angle 3 = 90°$ $m\angle 2 + m\angle 4 = 90°$	2. Def of Complementary $\angle$'s
3. $m\angle 1 + m\angle 3 = m\angle 2 + m\angle 4$	3. Substitution POE
4. $\angle 2 \cong \angle 3$	4. Def. of Vertical $\angle$'s
5. $m\angle 2 = m\angle 3$	5. If $\cong \Rightarrow =$.
6. $m\angle 1 + m\angle 2 = m\angle 2 + m\angle 4$	6. Substitution POE
7. $m\angle 1 = m\angle 4$	7. Subtraction POE
8. $\angle 1 \cong \angle 4$.	8. If $= \Rightarrow \cong$.