

### 3.3 Parallel Lines Proofs DAY TWO CYU

Be sure to number your statements and reasons.

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

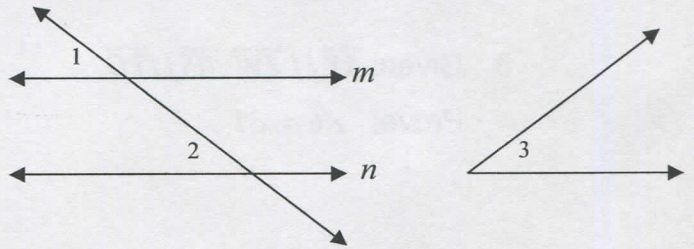
**G** Use when you completed the problem in a group

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

**N** Use when a question was not even attempted

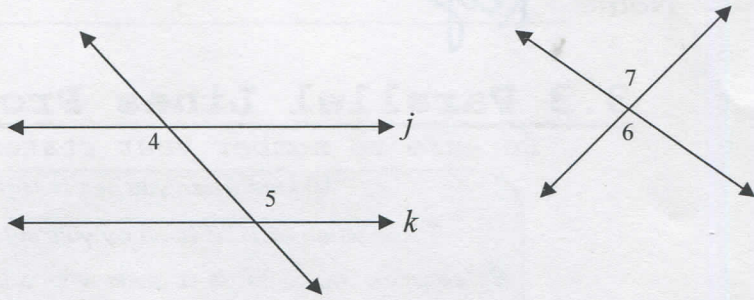
CONCEPTS	BASIC	INTERMEDIATE	ADVANCED
Given	1 - 7		
Corresponding Angles Thm/Converse	1	3, 4	6
Transitive POC	1, 2	3	6
AIA Thm/Converse	2	3, 5	6
Vertical Angles Definition	2		7
Linear Pair Postulate		4	7
Def. of Congruent Angles		4, 5	7
Substitution POE		4, 5	7
Add. POE/Subtraction POE			7

1. Given:  $m \parallel n, \angle 2 \cong \angle 3$   
 Prove:  $\angle 1 \cong \angle 3$



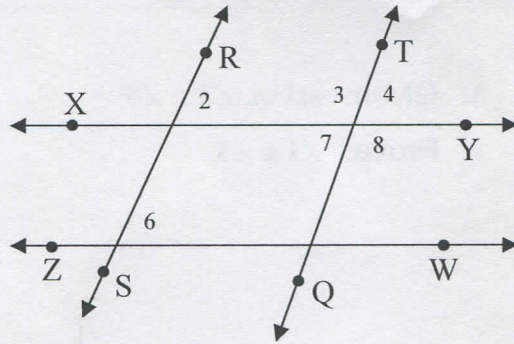
STATEMENTS	REASONS
1. $m \parallel n; \angle 2 \cong \angle 3$	1. given
2. $\angle 1 \cong \angle 2$	2. If $\leftrightarrow R \parallel \Rightarrow$ corr $\angle$ 's $R \cong$ .
$\therefore$ 3. $\angle 1 \cong \angle 3$	3. Transitive POC

2. Given:  $j \parallel k, \angle 5 \cong \angle 6$   
 Prove:  $\angle 4 \cong \angle 7$



STATEMENTS	REASONS
1. $j \parallel k; \angle 5 \cong \angle 6$	1. given
2. $\angle 4 \cong \angle 5$	2. If $\leftrightarrow R \parallel \Rightarrow$ AIA $R \cong$ .
3. $\angle 6 \cong \angle 7$	3. Def of vertical $\angle$ 's
4. $\angle 4 \cong \angle 7$	4. Transitive POC

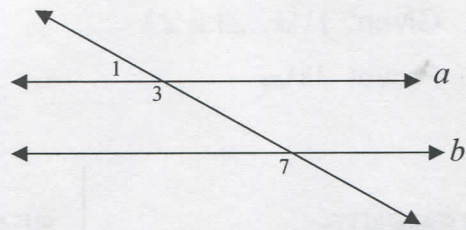
3. Given:  $\overleftrightarrow{XY} \parallel \overleftrightarrow{ZW}; \overleftrightarrow{RS} \parallel \overleftrightarrow{TQ}$   
 Prove:  $\angle 6 \cong \angle 7$



STATEMENTS	REASONS
1. $\overleftrightarrow{XY} \parallel \overleftrightarrow{ZW}; \overleftrightarrow{RS} \parallel \overleftrightarrow{TQ}$	1. given
2. $\angle 6 \cong \angle 2$	2. If $\leftrightarrow R \parallel \Rightarrow$ Corr $\angle R \cong$ .
3. $\angle 2 \cong \angle 7$	3. If $\leftrightarrow R \parallel \Rightarrow$ AIA $R \cong$ .
4. $\angle 6 \cong \angle 7$	4. Transitive POC

4. Given:  $a \parallel b$

Prove:  $m\angle 1 + m\angle 7 = 180^\circ$



STATEMENTS

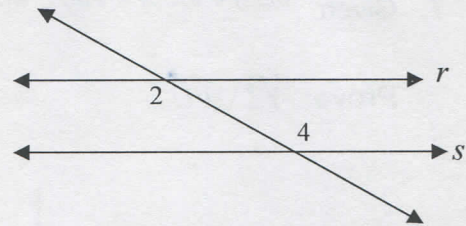
REASONS

1.  $a \parallel b$
2.  $\angle 3 \cong \angle 7$
3.  $m\angle 1 + m\angle 3 = 180^\circ$
4.  $m\angle 3 = m\angle 7$
5.  $m\angle 1 + m\angle 7 = 180^\circ$

1. given
2. If  $\leftrightarrow R \parallel \Rightarrow$  Corr  $\angle$ 's  $R \cong$ .
3. Linear Pair Postulate
4. If  $\cong \Rightarrow =$ .
5. Substitution POE

5. Given:  $m\angle 2 = 122^\circ$ ,  $m\angle 4 = 122^\circ$

Prove:  $r \parallel s$



STATEMENTS

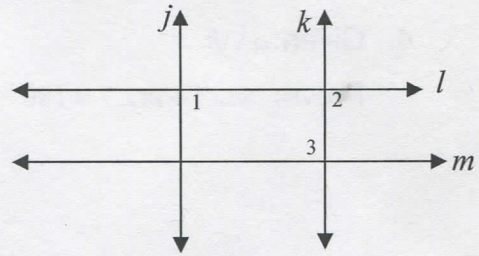
REASONS

1.  $m\angle 2 = 122^\circ$ ;  $m\angle 4 = 122^\circ$
2.  $m\angle 2 = m\angle 4$
3.  $\angle 2 \cong \angle 4$
4.  $r \parallel s$

1. given
2. Substitution POE
3. If  $= \Rightarrow \cong$
4. If  $AIA R \cong \Rightarrow \leftrightarrow R \parallel$ .

6. Given:  $j \parallel k, \angle 1 \cong \angle 3$

Prove:  $l \parallel m$



STATEMENTS

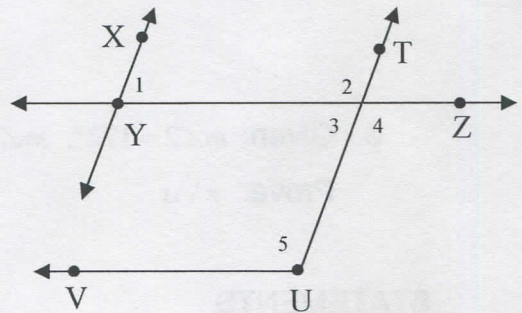
REASONS

1.  $j \parallel k; \angle 1 \cong \angle 3$
2.  $\angle 2 \cong \angle 1$
3.  $\angle 2 \cong \angle 3$
4.  $l \parallel m$

1. Given
2. If  $\leftrightarrow R \parallel \Rightarrow$  corr  $\angle$ 's  $R \cong$  (Corr  $\angle$  Thm)
3. Transitive POC
4. AIA Converse (if AIA  $R \cong \Rightarrow \leftrightarrow R \parallel$ .)

7. Given:  $m\angle 1 + m\angle 4 = 180^\circ, m\angle 1 + m\angle 5 = 180^\circ$

Prove:  $\overleftrightarrow{YZ} \parallel \overleftrightarrow{VU}$



STATEMENTS

REASONS

1.  $m\angle 1 + m\angle 4 = 180^\circ, m\angle 1 + m\angle 5 = 180^\circ$
2.  $m\angle 1 + m\angle 4 = m\angle 1 + m\angle 5$
3.  $m\angle 4 = m\angle 5$
4.  $\angle 4 \cong \angle 5$
5.  $\overleftrightarrow{YZ} \parallel \overleftrightarrow{VU}$

1. given
2. Substitution POE
3. Subtraction POE
4. Def of Congruent Angles
5. AIA Converse (if AIA  $R \cong \Rightarrow \leftrightarrow R \parallel$ .)

**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.

● ● ● ● ● ● ●

1	2	3	4	5	6	7	8
Basic		Intermediate			Advanced		Solved ALL!

