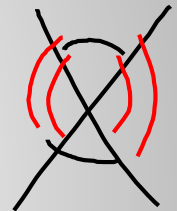
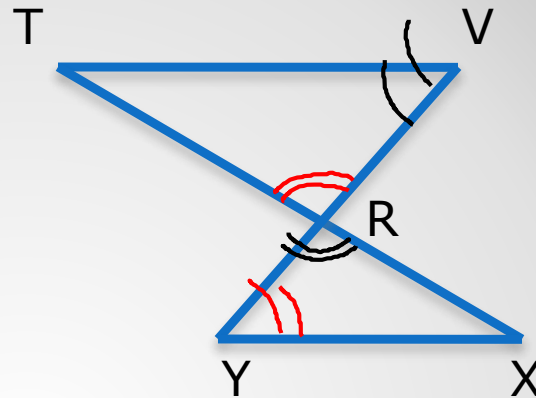


Given:  $\angle V \cong \angle YRX$   
 $\angle Y \cong \angle TRV$   
 Prove:  $\angle V \cong \angle Y$

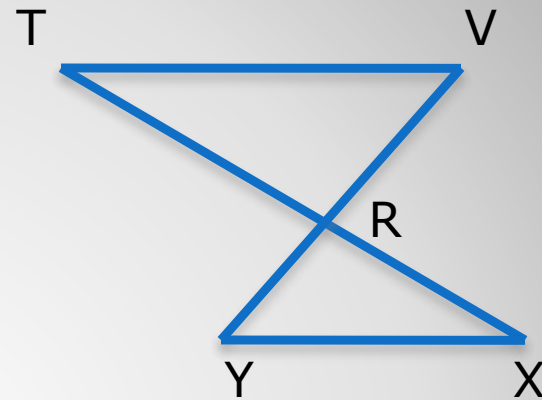


\*\*Two Column Proof

S	R
① $\angle V \cong \angle YRX$	① Given
② $\angle Y \cong \angle TRV$	② Given
③ $\angle TRV \cong \angle YRX$	③ Verticals $\angle$ 's are $\cong$
④ $\angle V \cong \angle Y$	④ Transitive Property

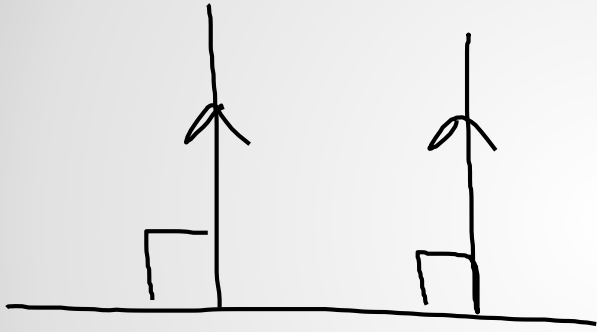
**WARM UP**

Given:  $\angle V \cong \angle YRX$   
 $\angle Y \cong \angle TRV$   
 Prove:  $\angle V \cong \angle Y$



Statements	Reasons
1. $\angle V \cong \angle YRX$ $\angle Y \cong \angle TRV$	1. Given
2. $\angle TRV$ and $\angle YRX$ are vertical $\angle$ s.	2. Assumed from diagram
3. $\angle TRV \cong \angle YRX$	3. Vertical $\angle$ s are $\cong$
4. $\angle V \cong \angle Y$	4. Transitive Property

**THE ANSWER!!**



# Advanced Geometry

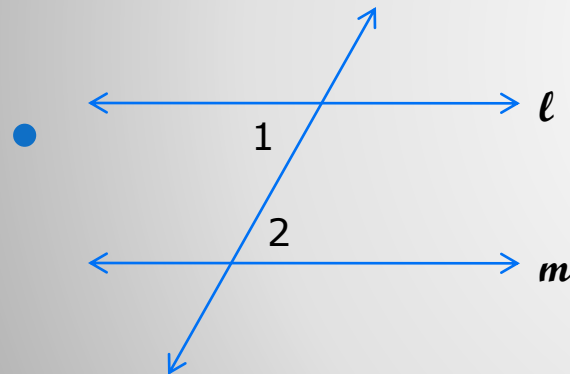
Section 5.2 Proving lines are parallel

- If two lines are cut by a transversal such that ***two alternate interior angles are congruent***, then the lines are parallel.

If

↓ then

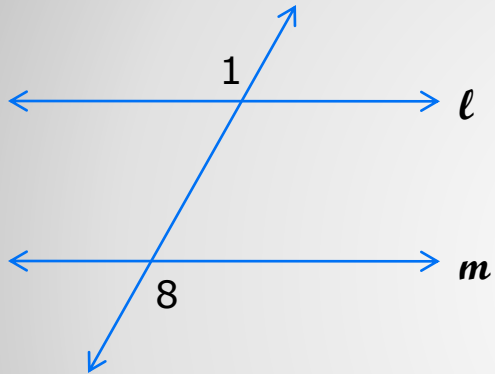
- Shortcut: Alt int  || lines




If  then  $l \parallel m$ .

**Theorem**

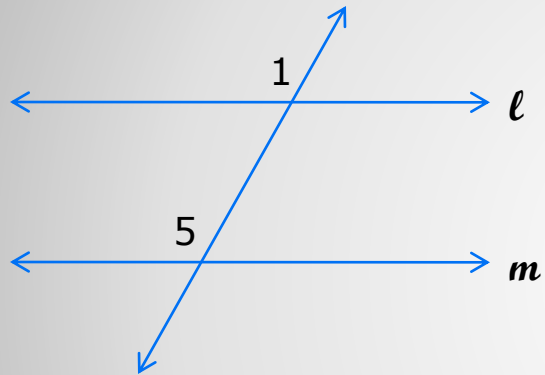
• Alt ext



If   
then  $l \parallel m$ .

**Theorem**

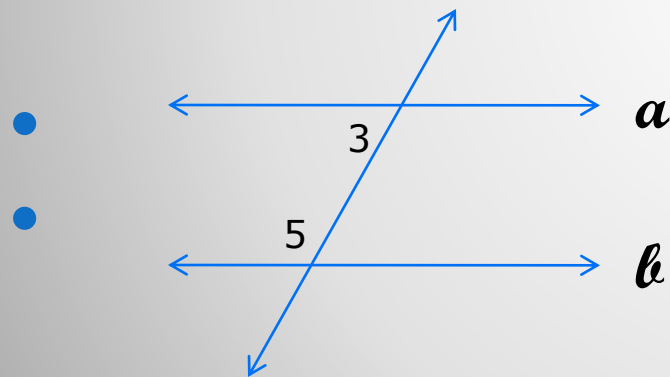
- Corresp  lines



If   
then  $l \parallel m$ .

**Theorem**

- If two lines are cut by a transversal such that ***two interior angles on the same side of the transversal are supplementary***, then the lines are parallel.
- Same side int  $\angle$ s suppl  $\Rightarrow$   $||$  lines

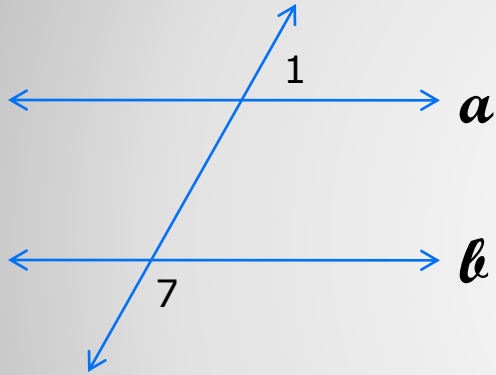


If ~~two interior angles on the same side of the transversal are supplementary~~  
 then  $a || b$ .

# Theorem



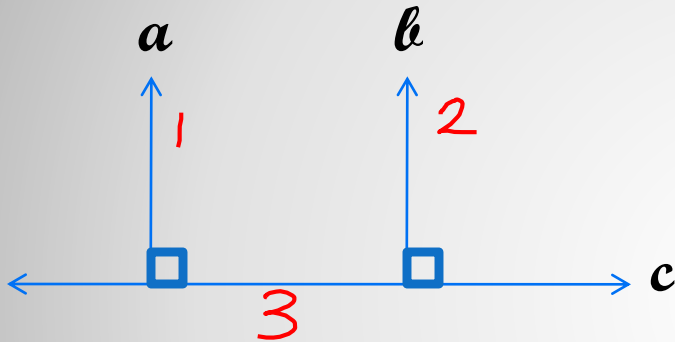
Same side ext  $\angle$ 's supp  $\Rightarrow$   $\parallel$  lines.



If  ~~$\angle 1$  and  $\angle 7$~~  are supp,  
then  $a \parallel b$ .

**Theorem**

- If two coplanar lines are  $\perp$  to a 3<sup>rd</sup> line, then they are  $\parallel$ .



If  $a \perp c$  and  $b \perp c$ ,  
then  $a \parallel b$ .

**Theorem**

- Read Sample Problem 1 on p. 218
- Homework: p. 220 #4, 5, 8, 9, 13, 16,  
20, 24

**\*\*TEST Next Tuesday  
Index Cards due, too!!! (50)**

**Homework**