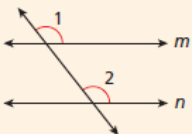


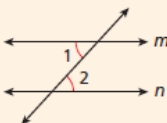
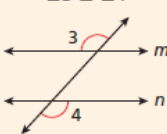
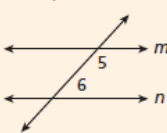


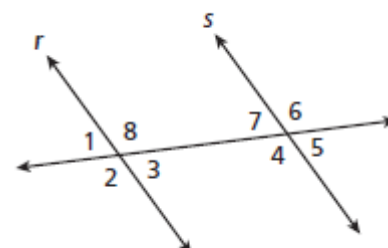
**Postulate 3-3-1** Converse of the Corresponding Angles Postulate

POSTULATE	HYPOTHESIS	CONCLUSION
If two coplanar lines are cut by a transversal so that a pair of corresponding angles are congruent, then the two lines are parallel.	$\angle 1 \cong \angle 2$ 	$m \parallel n$



**Theorems** Proving Lines Parallel

THEOREM	HYPOTHESIS	CONCLUSION
<b>3-3-3 Converse of the Alternate Interior Angles Theorem</b> If two coplanar lines are cut by a transversal so that a pair of alternate interior angles are congruent, then the two lines are parallel.	$\angle 1 \cong \angle 2$ 	$m \parallel n$
<b>3-3-4 Converse of the Alternate Exterior Angles Theorem</b> If two coplanar lines are cut by a transversal so that a pair of alternate exterior angles are congruent, then the two lines are parallel.	$\angle 3 \cong \angle 4$ 	$m \parallel n$
<b>3-3-5 Converse of the Same-Side Interior Angles Theorem</b> If two coplanar lines are cut by a transversal so that a pair of same-side interior angles are supplementary, then the two lines are parallel.	$m\angle 5 + m\angle 6 = 180^\circ$ 	$m \parallel n$



**SEE EXAMPLE 2**

p. 164

Use the theorems and given information to show that  $r \parallel s$ .

4.  $\angle 1 \cong \angle 5$
5.  $m\angle 3 + m\angle 4 = 180^\circ$
6.  $\angle 3 \cong \angle 7$
7.  $m\angle 4 = (13x - 4)^\circ$ ,  $m\angle 8 = (9x + 16)^\circ$ ,  $x = 5$
8.  $m\angle 8 = (17x + 37)^\circ$ ,  $m\angle 7 = (9x - 13)^\circ$ ,  $x = 6$
9.  $m\angle 2 = (25x + 7)^\circ$ ,  $m\angle 6 = (24x + 12)^\circ$ ,  $x = 5$



SEE EXAMPLE

3

p. 164

10. Complete the following two-column proof.

Given:  $\angle 1 \cong \angle 2$ ,  $\angle 3 \cong \angle 1$

Prove:  $XY \parallel WV$

Proof:

Statements	Reasons
1. $\angle 1 \cong \angle 2$ , $\angle 3 \cong \angle 1$	1. Given
2. $\angle 2 \cong \angle 3$	2. a. _____ ?
3. b. _____ ?	3. c. _____ ?

