

## Study Guide

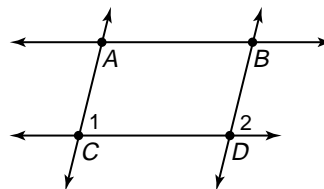
Student Edition  
Pages 146–153**Proving Lines Parallel**

Suppose two lines in a plane are cut by a transversal. With enough information about the angles that are formed, you can decide whether the two lines are parallel.

IF	THEN
Corresponding angles are congruent, Alternate interior angles are congruent, Alternate exterior angles are congruent, Consecutive interior angles are supplementary, The lines are perpendicular to the same line,	the lines are parallel.

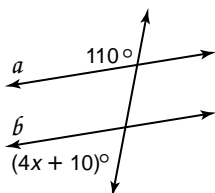
**Example:** If  $\angle 1 = \angle 2$ , which lines must be parallel? Explain.

$\overleftrightarrow{AC} \parallel \overleftrightarrow{BD}$  because a pair of corresponding angles are congruent.

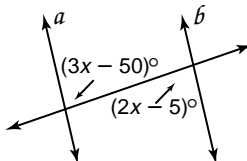


**Find the value of  $x$  so that  $a \parallel b$ .**

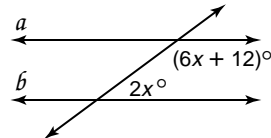
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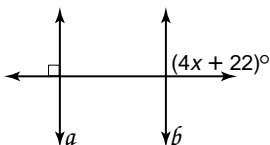
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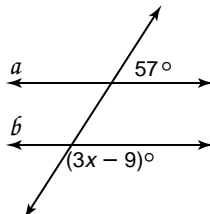
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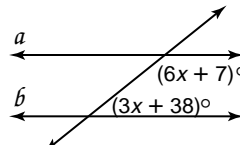
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5.



6.



**Given the following information, determine which lines, if any, are parallel. State the postulate or theorem that justifies your answer.**

7.  $\angle 1 \cong \angle 8$

8.  $\angle 4 \cong \angle 9$

9.  $m\angle 7 + m\angle 13 = 180$

10.  $\angle 9 \cong \angle 13$

