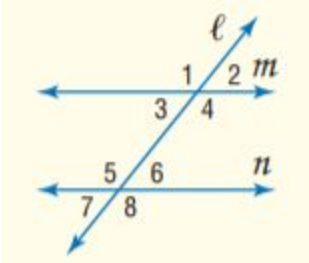
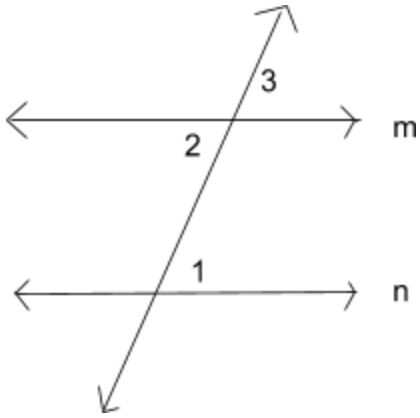
Recall Theorems from last class.



What do you notice?

What do you wonder?

What information do you need?

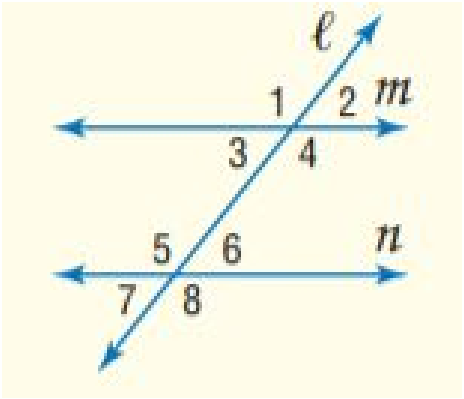


Given: $\angle 1 \cong \angle 2$

Prove: $m \| n$

Statements	Reasons
1.	1.
2.	2.
3.	3.
4.	4.

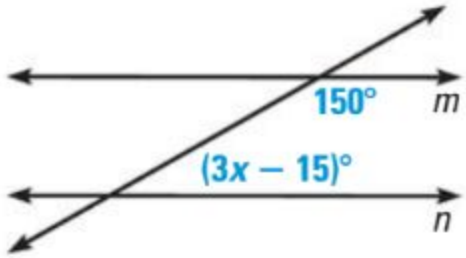
Objectives:
The student will be able to apply theorems to prove lines are parallel.
The student will be able to apply theorems to solve equations and angle measures.



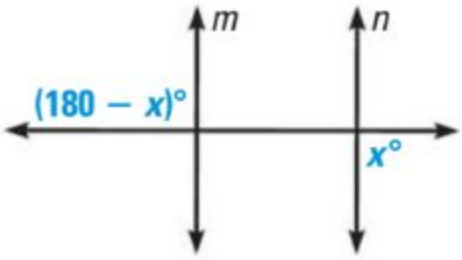
Converse of Corresponding Angles Postulate	If two lines are cut by a transversal so that corresponding angles are congruent, then the lines are parallel	If $\angle 1 \cong \angle 5$, $\angle 2 \cong \angle 6$, $\angle 3 \cong \angle 7$, or $\angle 4 \cong \angle 8$, then $m \parallel n$.
Alternate Exterior Angles **Converse**	If two lines in a plane are cut by a transversal so that a pair of alternate exterior angles is congruent, then the two lines are parallel	
Consecutive Interior Angles **Converse**	If two lines in a plane are cut by a transversal so that a pair of consecutive interior angles is supplementary, then the lines are parallel.	
Alternate Interior Angles **Converse**	If two lines in a plane are cut by a transversal so that a pair of alternate interior angles is congruent, then the lines are parallel	
Perpendicular transversal **Converse**	In a plane, if two lines are perpendicular to the same line,then they are parallel.	
Parallel Postulate	If given a line and a point not on the line, then there exists exactly one line through the point that is parallel to the given line.	

Examples:

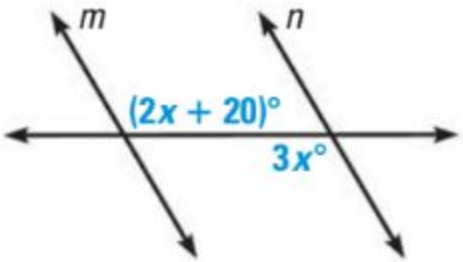
1. Find the value of x so that $m \| n$



2. Find the value of x so that $m \| n$

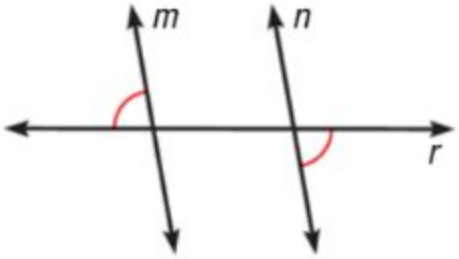


3. Find the value of x so that $m \| n$

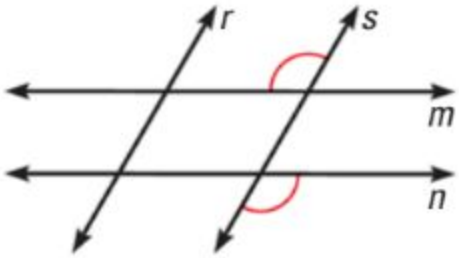


4. Is there enough information to prove $m \| n$? If so state the theorem or postulate that you would use.

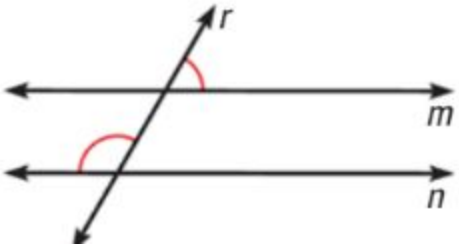
a.



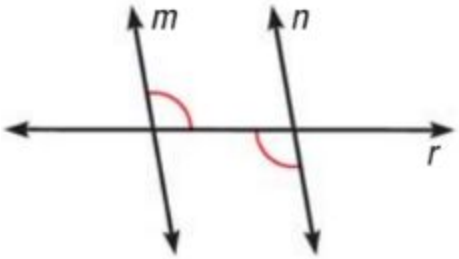
c.



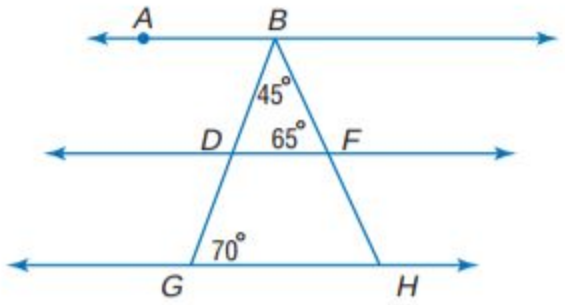
b.



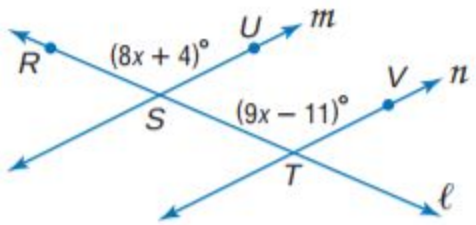
d.



5. In the figure $\overline{BG}$ bisects $\angle ABH$ Determine which lines if any are parallel.



6. Find x so that $m \| n$



7. Is $\overrightarrow{EB} \| \overrightarrow{HD}$?