



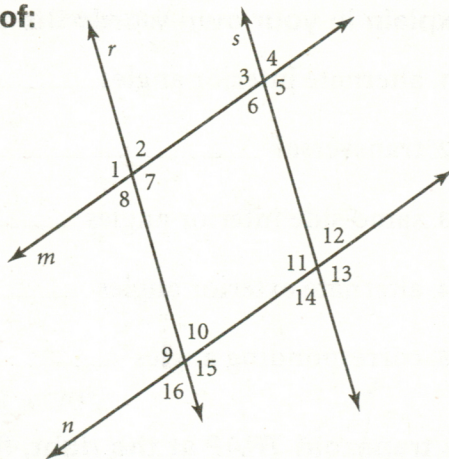
Practice Masters Level A

3.4 Proving That Lines are Parallel

Use the figure at right to complete the two-column proof:

Given: $\angle 4 \cong \angle 14$; $m\angle 11 + m\angle 8 = 180^\circ$

Prove: $r \parallel s$



Statements	Reasons
$\angle 4 \cong \angle 14$	1.
$m \parallel n$	2.
$m\angle 11 + m\angle 8 = 180^\circ$	3.
$m\angle 8 + m\angle 9 = 180^\circ$	4.
$m\angle 9 = m\angle 11$	5.
$r \parallel s$	6.

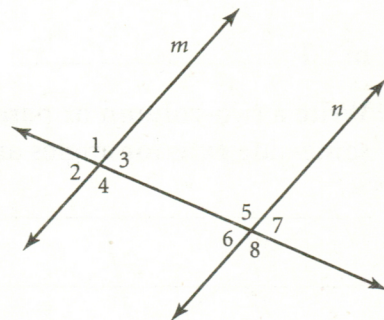
For Exercises 7–10, refer to the diagram at right, and fill in the name of the appropriate theorem or postulate.

7. If $m\angle 3 = m\angle 6$, then $m \parallel n$ by the Converse of the _____.

8. If $m\angle 2 = m\angle 6$, then $m \parallel n$ by the Converse of the _____.

9. If $m\angle 2 = m\angle 7$, then $m \parallel n$ by the Converse of the _____.

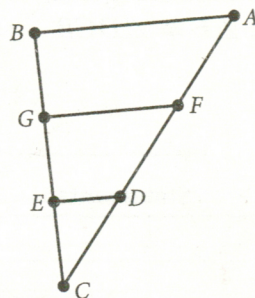
10. If $\angle 3$ and $\angle 5$ are supplementary, then $m \parallel n$ by the Converse of the _____.



For Exercises 11–12, use the figure at right.

11. If $\overline{BA} \perp \overline{BC}$ and $\overline{ED} \perp \overline{EC}$, what is the relationship between \overline{BA} and \overline{ED} ? Explain.

12. If $\overline{DE} \parallel \overline{BA}$ and $\overline{GF} \parallel \overline{DE}$, what is the relationship between \overline{BA} and \overline{GF} ? Explain.





Practice Masters Level B

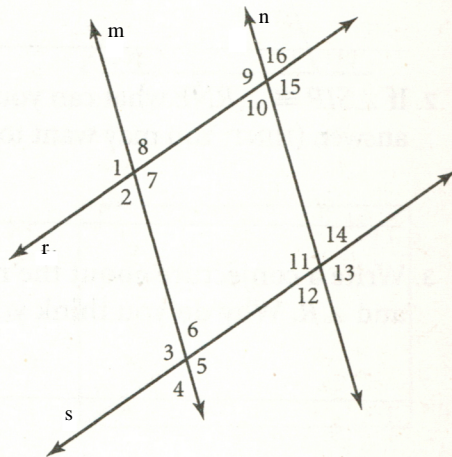
3.4 Proving That Lines are Parallel

Use the figure at right to complete the two-column proof:

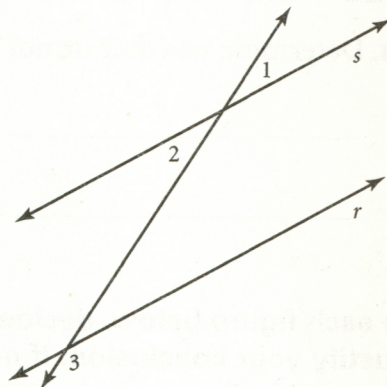
Given: $\angle 4 \cong \angle 16$; $m\angle 4 + m\angle 1 = 180^\circ$

Prove: $m \parallel n$

Statements	Reasons
$m\angle 4 + m\angle 3 = 180^\circ$	1.
$m\angle 4 + m\angle 1 = 180^\circ$	2.
$m\angle 1 = m\angle 3$	3.
$r \parallel s$	4.
$m\angle 2 = m\angle 4$	5.
$m\angle 2 = m\angle 8$	6.
$m\angle 4 = m\angle 8$	7.
$m\angle 4 = m\angle 16$	8.
$m\angle 8 = m\angle 16$	9.
$m \parallel n$	10.



11. In the figure at right, $m\angle 1 = 3x + 14$, $m\angle 2 = 9x - 14$, and $m\angle 3 = 30x + 14$. Determine whether or not $r \parallel s$. Justify your answer.



Use the figure at right for the statements in Exercises 12–15. What conclusion can you draw from each statement? Justify your answer.

12. $m\angle 1 = m\angle 4$ _____

13. $m \perp t$ and $m \perp q$ _____

14. $s \parallel q$ and $t \parallel q$ _____

15. $m\angle 3 = m\angle 1$ _____

