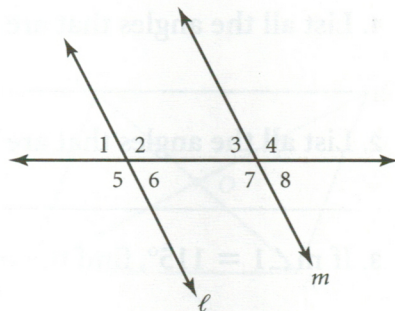




Practice

3.4 Proving That Lines Are Parallel

For Exercises 1–5, refer to the diagram below, and fill in the name of the appropriate theorem or postulate.



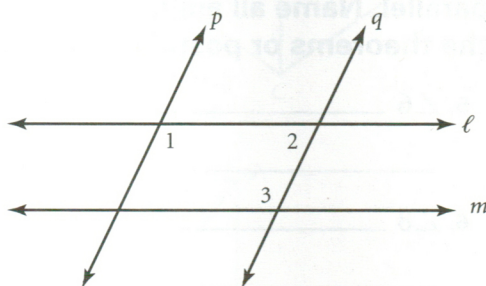
1. If $m\angle 5 = m\angle 4$, then $\ell \parallel m$ by the converse of the _____.
2. If $m\angle 6 = m\angle 3$, then $\ell \parallel m$ by the converse of the _____.
3. If $m\angle 1 = m\angle 3$, then $\ell \parallel m$ by the converse of the _____.
4. If $m\angle 1 = m\angle 8$, then $\ell \parallel m$ by the converse of the _____.
5. If $m\angle 6 + m\angle 7 = 180^\circ$, then $\ell \parallel m$ by the converse of the _____.

For Exercises 6–12, use the diagram at right to complete the two-column proof below.

Given: $m\angle 1 = m\angle 3$

$p \parallel q$

Prove: $\ell \parallel m$



Statements

Reasons

$p \parallel q$

6. _____

$\angle 1$ and $\angle 2$ are supplementary.

7. _____

$m\angle 1 + m\angle 2 = 180^\circ$

8. _____

$m\angle 1 = m\angle 3$

9. _____

$m\angle 3 + m\angle 2 = 180^\circ$

10. _____

$\angle 3$ and $\angle 2$ are supplementary.

11. _____

$\ell \parallel m$

12. _____