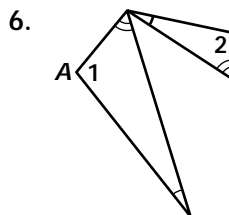
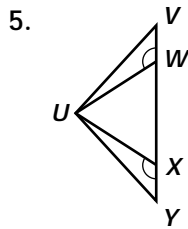
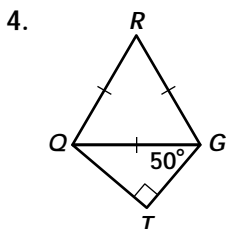
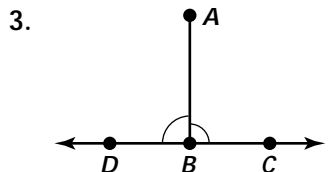
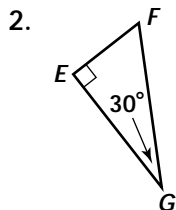
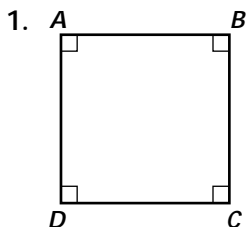


Practice 4-3

Example Exercises

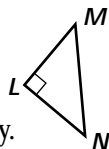
What can you conclude from each diagram? Justify your answers.



7. Complete this paragraph proof.

Given: $\triangle LMN$, with right angle L

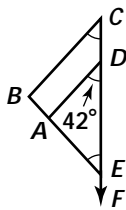
Prove: $\angle M$ and $\angle N$ are complementary.



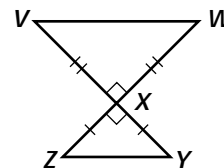
We are given that $\angle L$ is a right angle, so by the definition of a right angle, $m\angle L = \underline{\hspace{2cm}}$. By the Triangle Angle-Sum Theorem, $m\angle L + m\angle M + m\angle N = 180$. Then, $90 + m\angle M + m\angle N = 180$ by Substitution. By the Subtraction Property of Equality, $m\angle M + m\angle N = 90$. Finally, by the Definition of Complementary Angles, $\angle M$ and $\angle N$ are complementary.

Refer to the diagram to complete each statement.

- 8. $m\angle DAE = \underline{\hspace{2cm}}$
- 9. $m\angle CBE = \underline{\hspace{2cm}}$
- 10. $m\angle BCD = \underline{\hspace{2cm}}$
- 11. $m\angle BEF = \underline{\hspace{2cm}}$



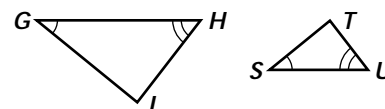
- 12. $m\angle VWX = \underline{\hspace{2cm}}$
- 13. $m\angle XZY = \underline{\hspace{2cm}}$
- 14. $m\angle WXY = \underline{\hspace{2cm}}$
- 15. $m\angle VXZ = \underline{\hspace{2cm}}$



16. Rewrite this paragraph proof of Theorem 4-5 as a two-column proof.

Given: $\angle G \cong \angle S$ and $\angle H \cong \angle U$

Prove: $\angle I \cong \angle T$



By the Triangle Angle-Sum Theorem, $m\angle G + m\angle H + m\angle I = 180$ and $m\angle S + m\angle T + m\angle U = 180$. By substitution, $m\angle G + m\angle H + m\angle I = m\angle S + m\angle T + m\angle U$. We are given that $\angle G \cong \angle S$ and $\angle H \cong \angle U$ (or $m\angle G = m\angle S$ and $m\angle H = m\angle U$). Subtracting equal quantities from both sides of the equation leaves $m\angle I = m\angle T$, so $\angle I \cong \angle T$.