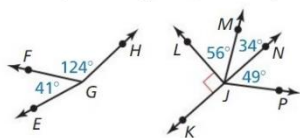


# 1.6 Exercises

In Exercises 3–6, use the figure. (See Example 1.)



3. Name a pair of adjacent complementary angles.
4. Name a pair of adjacent supplementary angles.
5. Name a pair of nonadjacent complementary angles.
6. Name a pair of nonadjacent supplementary angles.

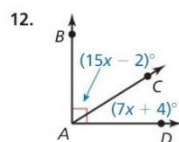
In Exercises 7–10, find the angle measure.

(See Example 2.)

7.  $\angle 1$  is a complement of  $\angle 2$ , and  $m\angle 1 = 23^\circ$ . Find  $m\angle 2$ .
8.  $\angle 3$  is a complement of  $\angle 4$ , and  $m\angle 3 = 46^\circ$ . Find  $m\angle 4$ .
9.  $\angle 5$  is a supplement of  $\angle 6$ , and  $m\angle 5 = 78^\circ$ . Find  $m\angle 6$ .
10.  $\angle 7$  is a supplement of  $\angle 8$ , and  $m\angle 7 = 109^\circ$ . Find  $m\angle 8$ .

In Exercises 11–14, find the measure of each angle.

(See Example 3.)



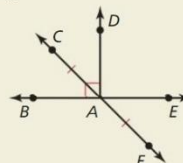
14.  $\angle EFG$  and  $\angle LMN$  are supplementary angles,  $m\angle EFG = (3x + 17)^\circ$ , and  $m\angle LMN = (\frac{1}{2}x - 5)^\circ$ .

**CRITICAL THINKING** In Exercises 36–41, tell whether the statement is *always*, *sometimes*, or *never* true. Explain your reasoning.

36. Complementary angles are adjacent.
37. Angles in a linear pair are supplements of each other.
38. Vertical angles are adjacent.
39. Vertical angles are supplements of each other.
42. **WRITING** Explain why the supplement of an acute angle must be obtuse.
43. **WRITING** Explain why an obtuse angle does not have a complement.

46. **HOW DO YOU SEE IT?** Tell whether you can conclude that each statement is true based on the figure. Explain your reasoning.

- a.  $\overline{CA} \cong \overline{AF}$ .
- b. Points C, A, and F are collinear.
- c.  $\angle CAD \cong \angle EAF$ .
- d.  $\overline{BA} \cong \overline{AE}$ .
- e.  $\overline{CF}$ ,  $\overline{BE}$ , and  $\overline{AD}$  intersect at point A.
- f.  $\angle BAC$  and  $\angle CAD$  are complementary angles.
- g.  $\angle DAE$  is a right angle.



Find the value of each variable in problems A and B.

