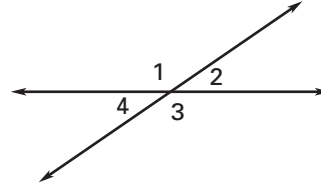


**Practice A**

For use with pages 109–116

Use the diagram to decide whether the statement is *true* or *false*.

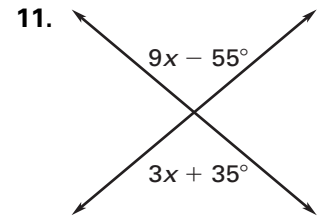
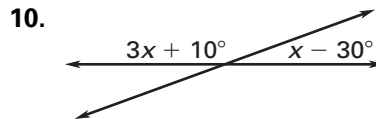
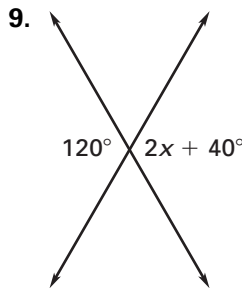
1. If  $m\angle 4 = 20^\circ$ , then  $m\angle 3 = 70^\circ$ .
2. If  $m\angle 4 = 20^\circ$ , then  $m\angle 2 = 20^\circ$ .
3.  $m\angle 4 + m\angle 2 = m\angle 3 + m\angle 1$
4.  $m\angle 4 + m\angle 1 = m\angle 3 + m\angle 2$



Make a sketch of the given information. Label all angles which can be determined.

5. Vertical angles which measure  $40^\circ$
6. A linear pair where one angle measures  $155^\circ$
7. Complementary angles where one angle measures  $75^\circ$
8. Supplementary angles where one angle measures  $75^\circ$

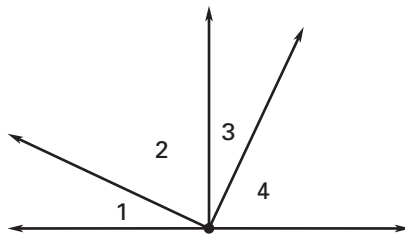
Solve for  $x$ .



12. Give a reason for each step of the proof. Choose from the list of reasons given.

**Given:**  $\angle 1$  and  $\angle 2$  are complementary.  
 $\angle 1 \cong \angle 3$ ,  $\angle 2 \cong \angle 4$

**Prove:**  $\angle 3$  and  $\angle 4$  are complementary.



**Reasons:** Definition of complementary angles  
 Definition of congruent angles  
 Substitution Property of Equality

**Statements**

1.  $\angle 1$  and  $\angle 2$  are complementary.
2.  $m\angle 1 + m\angle 2 = 90^\circ$
3.  $\angle 1 \cong \angle 3$ ,  $\angle 2 \cong \angle 4$
4.  $m\angle 1 = m\angle 3$ ,  $m\angle 2 = m\angle 4$
5.  $m\angle 3 + m\angle 2 = 90^\circ$
6.  $m\angle 3 + m\angle 4 = 90^\circ$
7.  $\angle 3$  and  $\angle 4$  are complementary.

**Reasons**

1. Given
2. ?
3. Given
4. ?
5. ?
6. ?
7. ?

13. Write a two-column proof.

**Given:**  $\angle 6 \cong \angle 7$

**Prove:**  $\angle 5 \cong \angle 8$

**Plan for Proof:** First show that  $\angle 5 \cong \angle 6$  and  $\angle 7 \cong \angle 8$ . Then use transitivity to show that  $\angle 5 \cong \angle 8$ .

