

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

### Practice 3-1

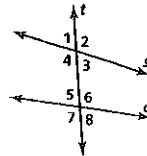
### Properties of Parallel Lines

Classify each pair of angles as *alternate interior angles*, *same-side interior angles*, or *corresponding angles*.

1. **corr**
2. **AIA**
3. **SSIA**
4. **AIA**
5. **SSIA**
6. **corr**

Use the figure on the right to answer Exercises 7-9.

7. Name all pairs of corresponding angles formed by the transversal  $t$  and lines  $s$  and  $c$ . **1,5 2,6 4,7 3,8**
8. Name all pairs of alternate interior angles formed by the transversal  $t$  and lines  $s$  and  $c$ . **4,6 3,5**
9. Name all pairs of same-side interior angles formed by the transversal  $t$  and lines  $s$  and  $c$ . **4,5 3,6**



Find  $m\angle 1$  and then  $m\angle 2$ . Justify each answer.

10.  **$m\angle 1 = 100^\circ$  (AIA),  $m\angle 2 = 100^\circ$  (vert)**
- $m\angle 1 = 75^\circ$  (AIA),  $m\angle 2 = 75^\circ$  (corr)**
- $m\angle 1 = 135^\circ$  (corr),  $m\angle 2 = 135^\circ$  (AIA)**

Algebra Find the value of  $x$ . Then find the measure of each angle.

13.  **$x + x - 26 = 180$   
 $2x = 206$  |  $x = 103$**
14.  **$\frac{x}{2} + 7x = 180$   
 $x + 14x = 360$   
 $15x = 360$   
 $x = 24$**
15.  **$3x - 5 = x + 55$   
 $2x = 60$   
 $x = 30$**

16. Developing Proof Supply the missing reasons in this two-column proof.

Given:  $a \parallel b$

Prove:  $\angle 1 \cong \angle 3$

Statements

- $a \parallel b$
- $\angle 1 \cong \angle 2$
- $\angle 2 \cong \angle 3$
- $\angle 1 \cong \angle 3$

Reasons

- Given
- ? **AIA**
- ? **vert  $\angle$ 's**
- ? **transitive property**

