

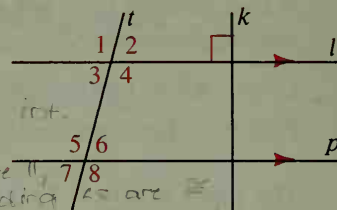
## Classroom Exercises

1. What do the arrowheads in the diagram tell you?

*It tells me  $l \parallel p$*

State the postulate or theorem that justifies each statement.

2.  $\angle 1 \cong \angle 5$       3.  $\angle 3 \cong \angle 6$       4.  $m\angle 4 + m\angle 6 = 180$       5.  $m\angle 4 = m\angle 8$   
 6.  $m\angle 4 = m\angle 5$       7.  $\angle 6 \cong \angle 7$       8.  $k \perp p$       9.  $\angle 3$  is supplementary to  $\angle 5$ .  
 10. If  $m\angle 1 = 130$ , what are the measures of the other numbered angles?  
 11. If  $m\angle 1 = x$ , what are the measures of the other numbered angles?  
 12. If  $m\angle 4 = 2m\angle 3$ , find  $m\angle 6$ .  
 13. If  $m\angle 5 = m\angle 6 + 20$ , find  $m\angle 1$ .



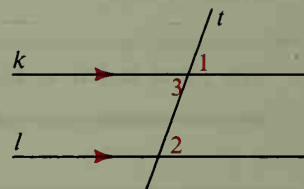
Exs. 1-13

14. Alan tried to prove Postulate 10 as shown below. However, he did not have a valid proof. Explain why not.

If two parallel lines are cut by a transversal, then corresponding angles are congruent.

Given:  $k \parallel l$ ; transversal  $t$  cuts  $k$  and  $l$ .

Prove:  $\angle 1 \cong \angle 2$



**Proof:**

Statements

Reasons

1.  $k \parallel l$   
 2.  $\angle 3 \cong \angle 2$   
 3.  $\angle 1 \cong \angle 3$   
 4.  $\angle 1 \cong \angle 2$

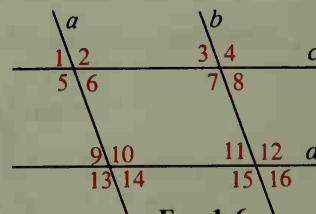
1. Given  
 2. If two parallel lines are cut by a transversal, then alt. int.  $\angle$ s are  $\cong$ .  
 3. Vert.  $\angle$ s are  $\cong$ .  
 4. Transitive Prop.

## Written Exercises

- A 1. If  $a \parallel b$ , name all angles that must be congruent to  $\angle 1$ .  
 2. If  $c \parallel d$ , name all angles that must be congruent to  $\angle 1$ .

Assume that  $a \parallel b$  and  $c \parallel d$ .

3. Name all angles congruent to  $\angle 2$ .  
 4. Name all angles supplementary to  $\angle 2$ .  
 5. If  $m\angle 13 = 110$ , then  $m\angle 15 = \underline{\quad ? \quad}$  and  $m\angle 3 = \underline{\quad ? \quad}$ .  
 6. If  $m\angle 7 = x$ , then  $m\angle 12 = \underline{\quad ? \quad}$  and  $m\angle 6 = \underline{\quad ? \quad}$ .



Exs. 1-6