

**Complete.**

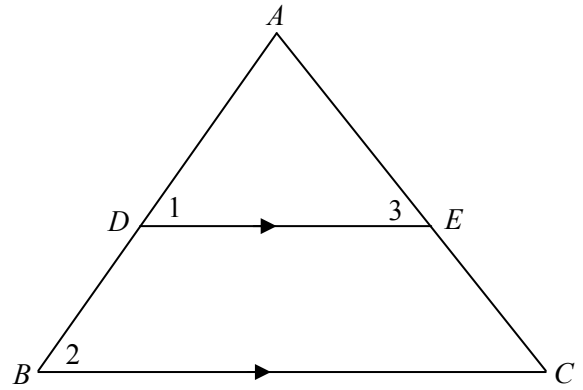
- 1) If  $m\angle 2 = 85$ , then  $m\angle 6 =$  \_\_\_\_\_ and  $m\angle 7 =$  \_\_\_\_\_
- 2) If  $m\angle 8 = 83$ , then  $m\angle 16 =$  \_\_\_\_\_ and  $m\angle 10 =$  \_\_\_\_\_
- 3) If  $m\angle 9 = 105$ , then  $m\angle 10 =$  \_\_\_\_\_ and  $m\angle 16 =$  \_\_\_\_\_
- 4) If  $m\angle 15 = 96$ , then  $m\angle 8 =$  \_\_\_\_\_ and  $m\angle 1 =$  \_\_\_\_\_

**Identify each pair of angles in exercises 5-8 as vertical, corresponding, alternate interior, or same-side interior.**

- 5)  $\angle 14$  and  $\angle 8$
- 6)  $\angle 9$  and  $\angle 13$
- 7)  $\angle 11$  and  $\angle 16$
- 8)  $\angle 1$  and  $\angle 3$
- 9) If two parallel lines are cut by a transversal, then corresponding angles are \_\_\_\_\_.
- 10) If two parallel lines are cut by a transversal, then alternate interior angles are \_\_\_\_\_.
- 11) If two parallel lines are cut by a transversal, then same-side interior angles are \_\_\_\_\_.

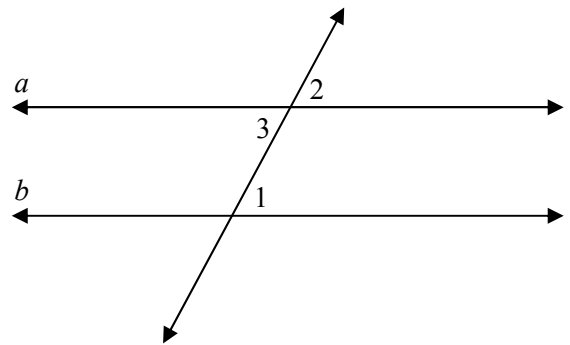
Complete a two-column proof.

- 12) Given:  $\overline{DE} \parallel \overline{BC}$ ;  $\angle 1 \cong \angle 3$   
Prove:  $\angle 2 \cong \angle 3$



Complete a two-column proof.

- 13) Given:  $a \parallel b$   
Prove:  $\angle 1 \cong \angle 3$



Answer Key

- 1) 85, 95
- 2) 83, 83
- 3) 75, 75
- 4) 84, 96
- 5) Alternate Interior Angles
- 6) Corresponding Angles
- 7) Same –Side Interior Angles
- 8) Vertical Angles
- 9) Congruent
- 10) Congruent
- 11) Supplementary

$\overline{DE} \parallel \overline{BC}; \angle 1 \cong \angle 3$  ..... Given

- 12)  $\angle 1 \cong \angle 2$  ..... If two parallel lines are cut by a transversal, then corresponding angles are congruent  
 $\angle 2 \cong \angle 3$  ..... Substitution

$a \parallel b$  ..... Given

- 13)  $\angle 1 \cong \angle 2$  ..... If lines are parallel, then corresponding angles are congruent  
 $\angle 2 \cong \angle 3$  ..... Vertical angles are congruent  
 $\angle 1 \cong \angle 3$  ..... Transitive Property of Congruence