

Definitions: (Label the Diagram)

Parallel lines: lines that never intersect  $a \parallel b$

Transversal: a line that intersects other lines

Intersects: cuts

SYMBOL (  $\parallel$  ) means parallel to

How many angles are formed? 8

Let's name the angles:

Alternate Interior Angles (clue words: opposite, inside)  
 $\angle 4, \angle 6$  and  $\angle 3, \angle 5$

Alternate Exterior Angles (clue words: opposite, outside)  
 $\angle 1, \angle 7$  and  $\angle 2, \angle 8$

Corresponding Angles (clue words: same side, same position)  
 \* think corresponding sides of  $\Delta$ s.  
 $\angle 1, \angle 5$      $\angle 4, \angle 8$      $\angle 2, \angle 6$      $\angle 3, \angle 7$

Same Side Interior Angles (clue words: inside)  
 $\angle 4, \angle 5$      $\angle 3, \angle 6$

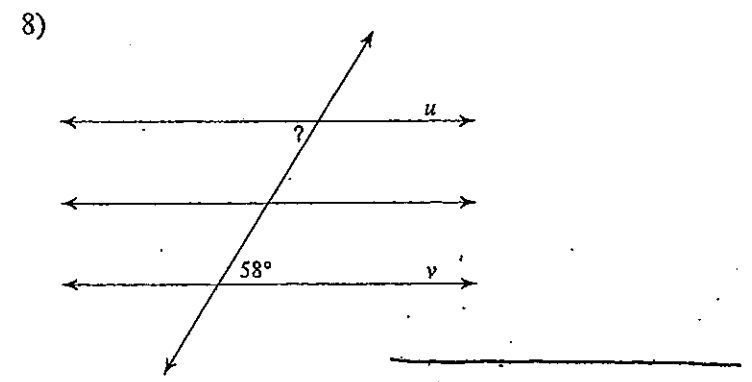
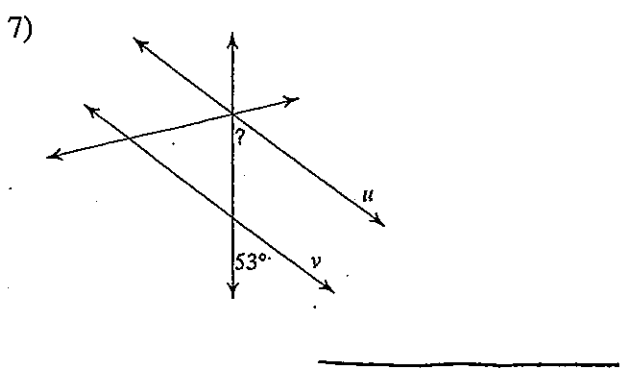
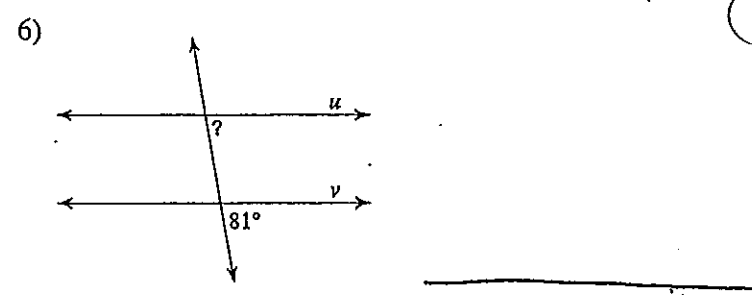
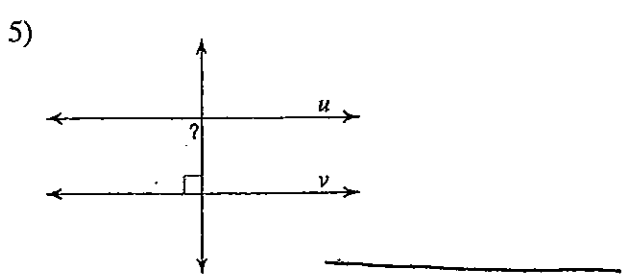
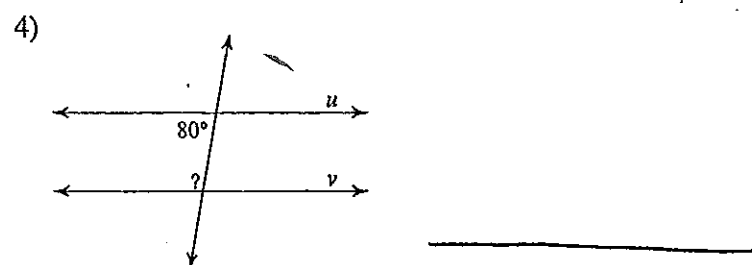
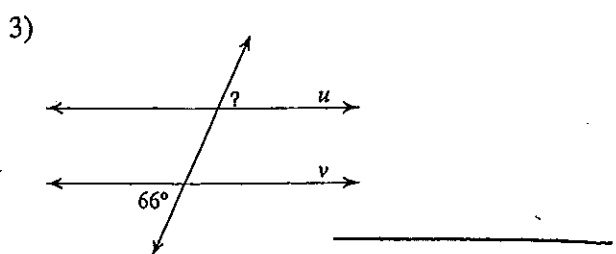
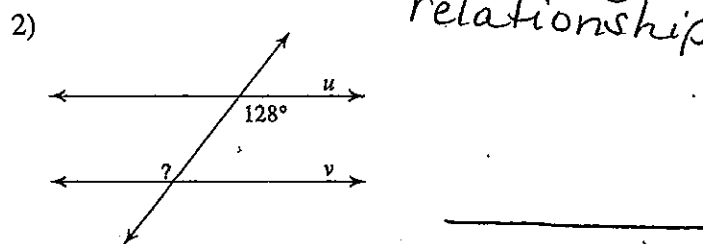
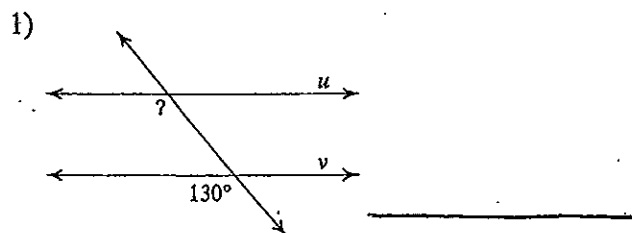
Same Side Exterior Angles (clue words: outside)  
 $\angle 1, \angle 8$      $\angle 2, \angle 7$

Vertical Angles (def: non-adjacent angles formed when 2 lines intersect)  
 $\angle 1, \angle 3$      $\angle 2, \angle 4$      $\angle 5, \angle 7$      $\angle 6, \angle 8$

Adjacent Angles (def: share an endpoint and ray.)  
 $\angle 1, \angle 2$      $\angle 2, \angle 3$      $\angle 3, \angle 4$      $\angle 1, \angle 4$   
 $\angle 5, \angle 6$      $\angle 6, \angle 7$      $\angle 7, \angle 8$      $\angle 5, \angle 8$

# Proving Lines Parallel

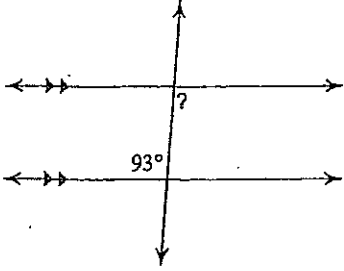
Find the measure of the indicated angle that makes lines  $u$  and  $v$  parallel. Name the angle relationship.



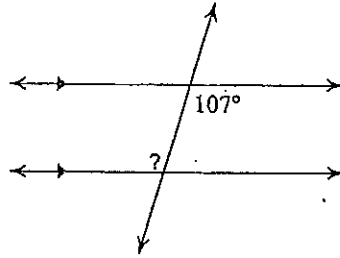
Parallel Lines and Transversals- Mixed Practice

Find the measure of each angle in the diagram. Use what you know about alternate interior, alternate exterior, corresponding, supplementary and vertical angles to help you.

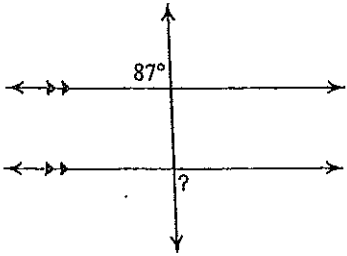
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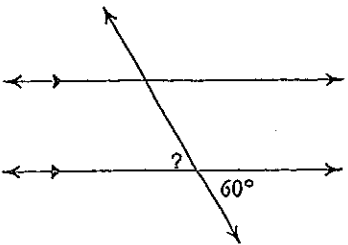
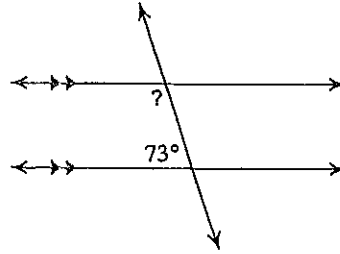
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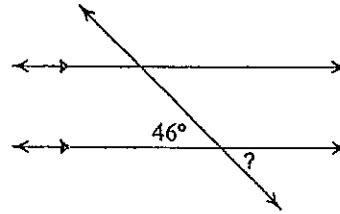
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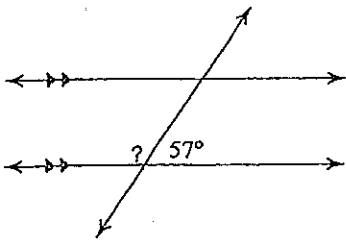
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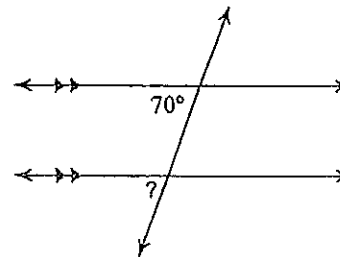
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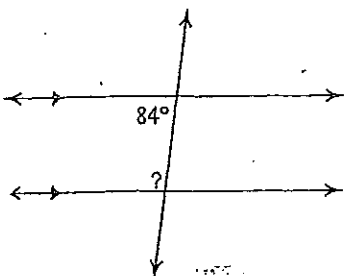
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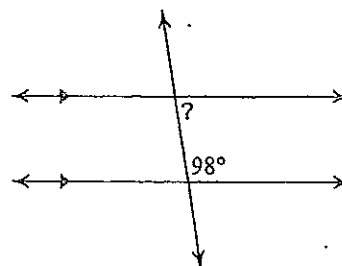
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9)



10)

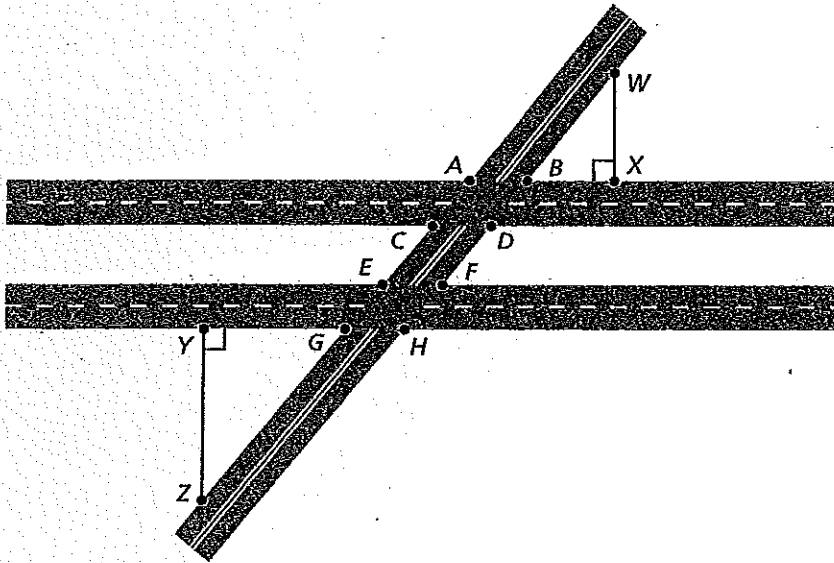


**CCSS**  
**8.G.5**

## Intersection

For use after Section 5.5

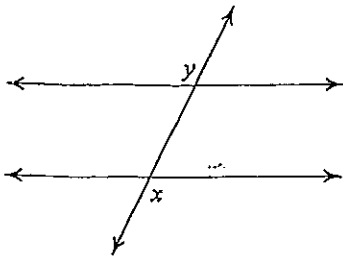
The diagram shows the intersection of a two-lane road and a four-lane expressway made up of two parallel roadways.



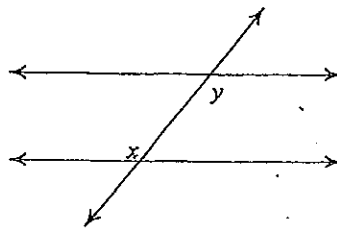
1. Give an example of two supplementary angles.
2. Give an example of two congruent angles on the inside of the four-lane expressway.
3. Give an example of two congruent angles on opposite sides of the four-lane expressway.
4. Give an example of two congruent angles on the same side of the two-lane road.

Identify the angle relationship shown by each pair of angles in the diagrams. Use Alternate Interior, Alternate Exterior, Corresponding, Supplementary, or Vertical.

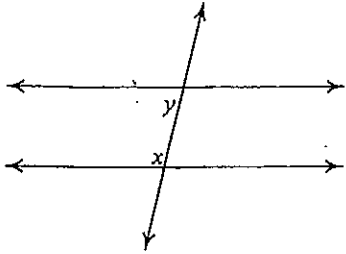
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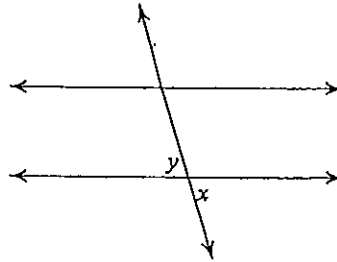
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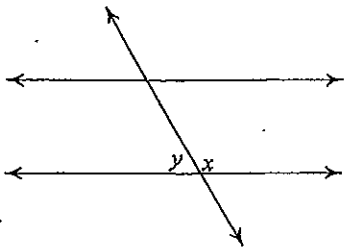
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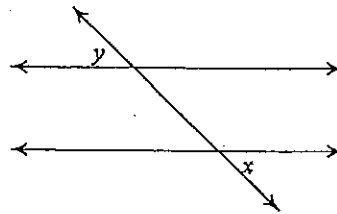
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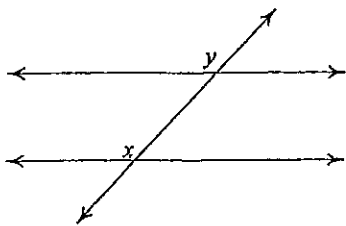
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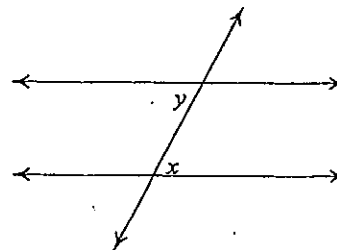
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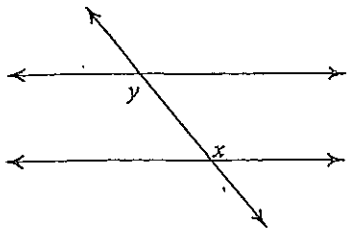
17)



18)



19)



20)

