

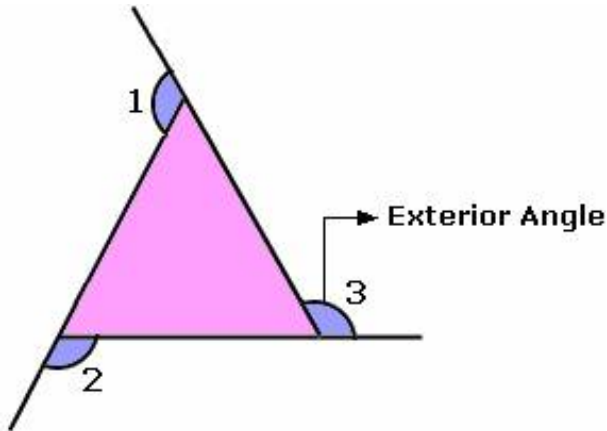
# Exterior Angle Inequality Theorem

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Sauyo High School

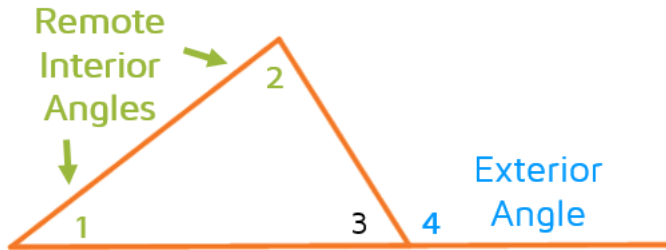
# What is the Exterior Angle?

It is the angle between a side of a polygon and an extended adjacent side.



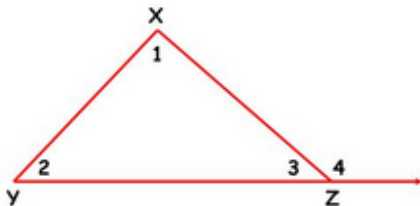
# What is a Remote Interior Angle?

It is an interior angle that is not adjacent to the exterior angle.



# What is the Exterior Angle Inequality Theorem?

The measure of an exterior angle of a triangle is greater than the measure of either remote interior angle.

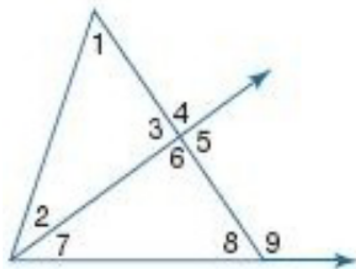


$$m\angle 4 > m\angle 1$$

$$m\angle 4 > m\angle 2$$

# Example 1

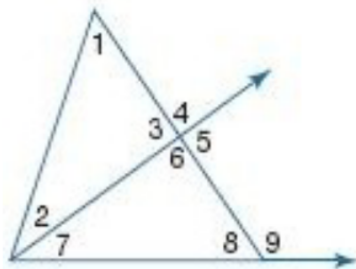
Refer to the figure to determine whether each statement is True or False.



$$m\angle 4 > m\angle 1$$

# Example 1

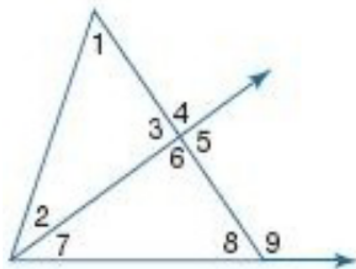
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$m\angle 4 > m\angle 1$   
True

# Example 1

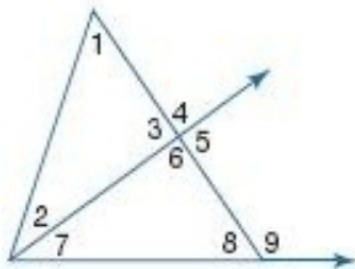
Refer to the figure to determine whether each statement is True or False.



$$m\angle 5 < m\angle 8$$

# Example 1

Refer to the figure to determine whether each statement is True or False.

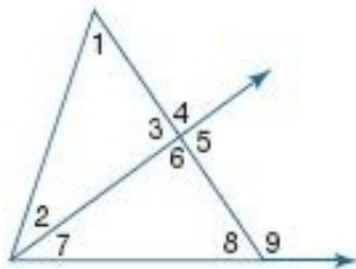


$m\angle 5 < m\angle 8$   
False



# Example 1

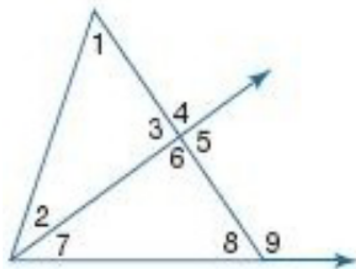
Refer to the figure to determine whether each statement is True or False.



$$m\angle 9 > m\angle 6$$

# Example 1

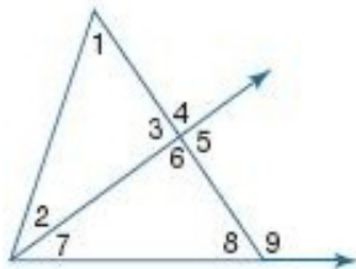
Refer to the figure to determine whether each statement is True or False.



$m\angle 9 > m\angle 6$   
True

# Example 1

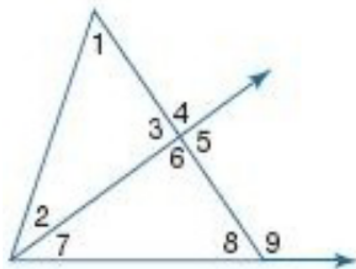
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$$m\angle 2 > m\angle 4$$

# Example 1

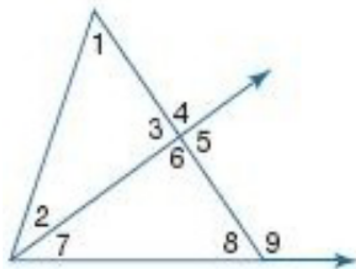
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$m\angle 2 > m\angle 4$   
False

# Example 1

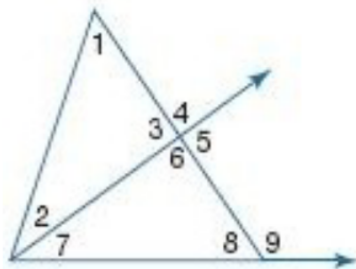
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$$m\angle 8 > m\angle 5$$

# Example 1

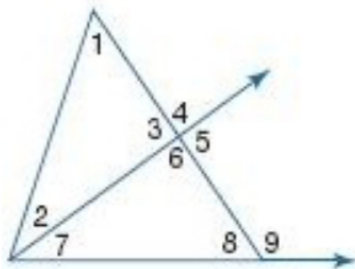
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$m\angle 8 > m\angle 5$   
False

# Example 1

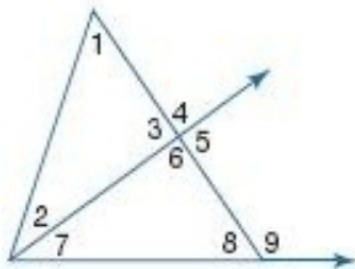
Refer to the figure to determine whether each statement is True or False.



$$m\angle 7 < m\angle 9$$

# Example 1

Refer to the figure to determine whether each statement is True or False.



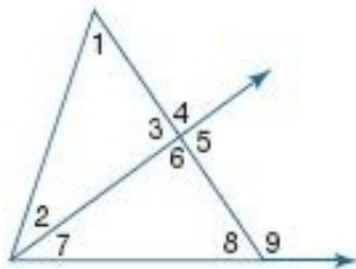
$$m\angle 7 < m\angle 9$$

True



# Example 1

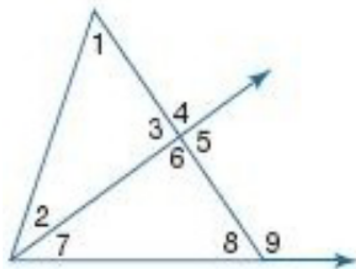
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$$m\angle 9 > m\angle 1$$

# Example 1

Refer to the figure to determine whether each statement is True or False.

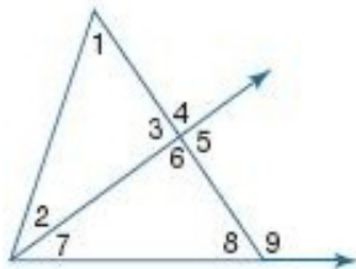


$$m\angle 9 > m\angle 1$$

True

# Example 1

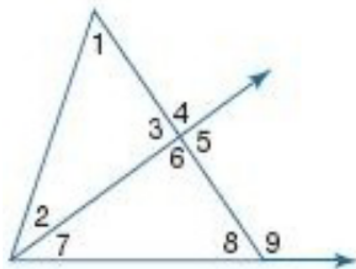
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$$m\angle 8 > m\angle 3$$

# Example 1

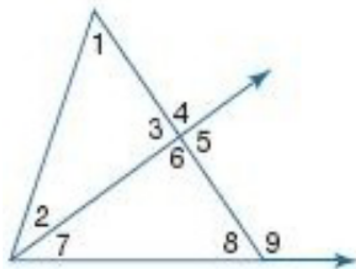
Refer to the figure to determine whether each statement is True or False.



$m\angle 8 > m\angle 3$   
False

# Example 1

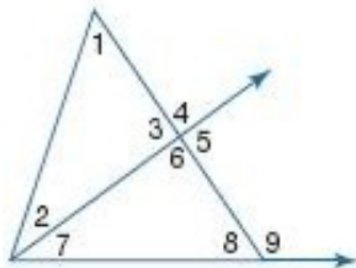
Refer to the figure to determine whether each statement is True or False.



$$m\angle 6 > m\angle 1$$

# Example 1

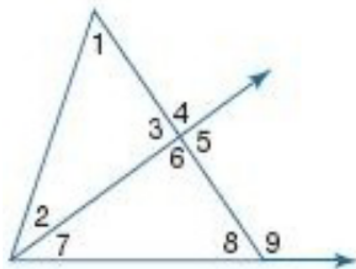
Refer to the figure to determine whether each statement is True or False.



$m\angle 6 > m\angle 1$   
True

# Example 1

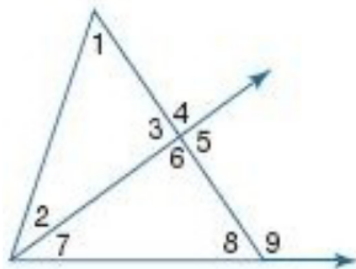
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$$m\angle 2 > m\angle 4$$

# Example 1

Refer to the figure to determine whether each statement is True or False.

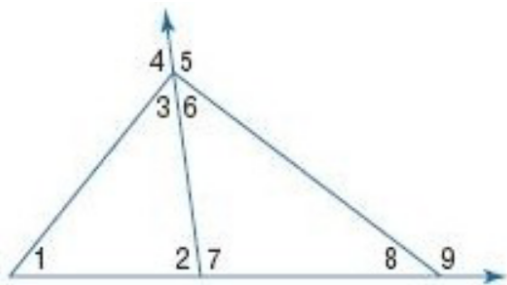


$m\angle 2 > m\angle 4$   
False



## Example 2

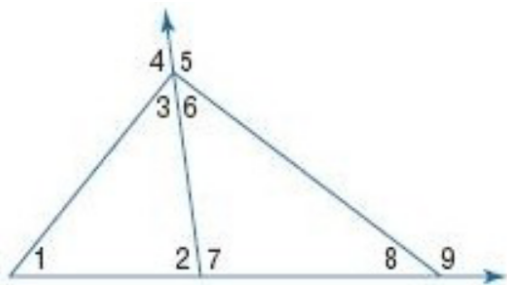
Refer to the figure to list all the angles that satisfy the stated condition.



measures greater than  $m\angle 7$

## Example 2

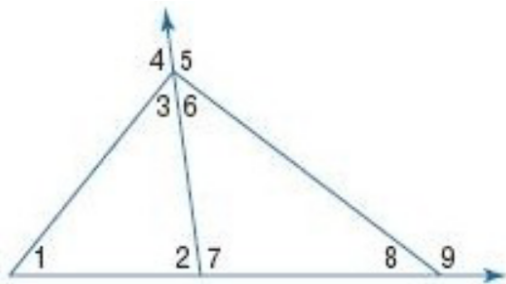
Refer to the figure to list all the angles that satisfy the stated condition.



measures greater than  $m\angle 7$   
 $\angle 5, \angle 9$

## Example 2

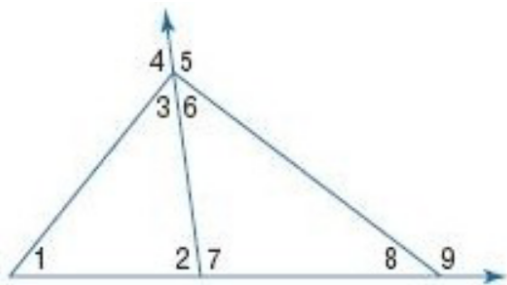
Refer to the figure to list all the angles that satisfy the stated condition.



measures less than  $m\angle 7$

## Example 2

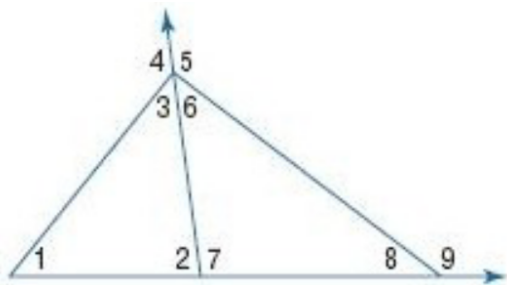
Refer to the figure to list all the angles that satisfy the stated condition.



measures less than  $m\angle 7$   
 $\angle 1, \angle 3$

## Example 2

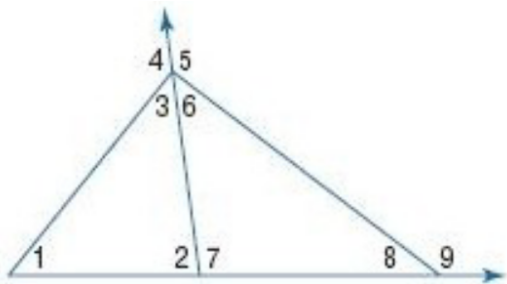
Refer to the figure to list all the angles that satisfy the stated condition.



measures greater than  $m\angle 6$

## Example 2

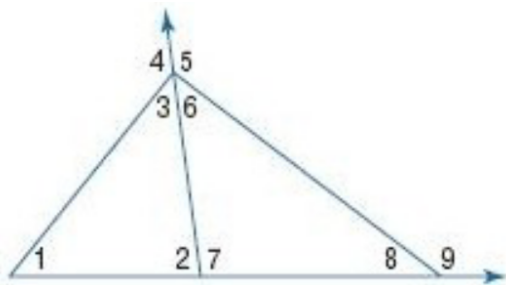
Refer to the figure to list all the angles that satisfy the stated condition.



measures greater than  $m\angle 6$   
 $\angle 2, \angle 9$

## Example 2

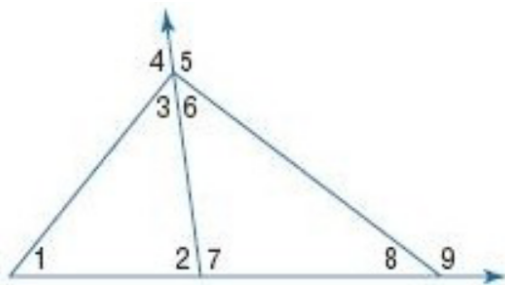
Refer to the figure to list all the angles that satisfy the stated condition.



measures less than  $m\angle 2$

## Example 2

Refer to the figure to list all the angles that satisfy the stated condition.

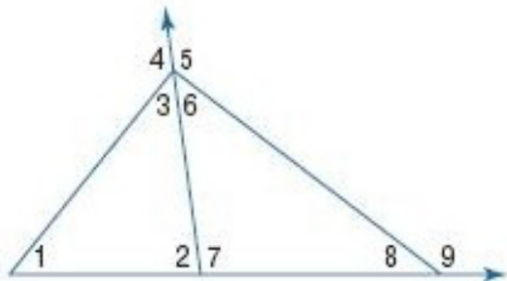


measures less than  $m\angle 2$   
 $\angle 6, \angle 8$



## Example 2

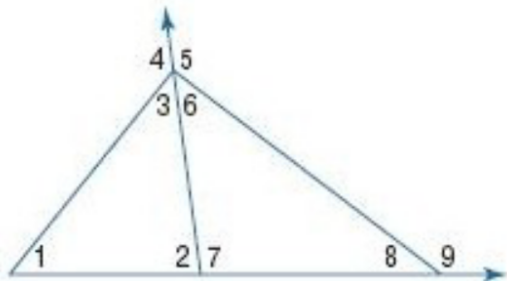
Refer to the figure to list all the angles that satisfy the stated condition.



measures greater than  $m\angle 2$

## Example 2

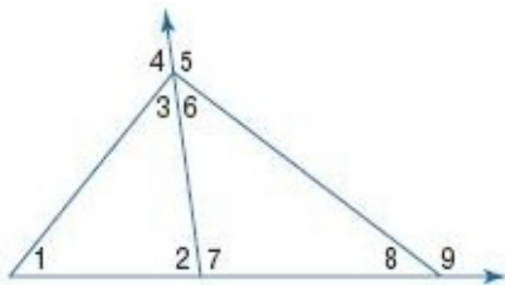
Refer to the figure to list all the angles that satisfy the stated condition.



measures greater than  $m\angle 2$   
 $\angle 4$

## Example 2

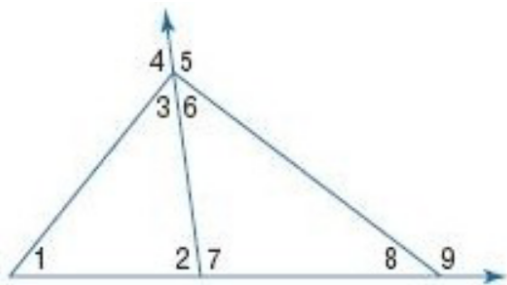
Refer to the figure to list all the angles that satisfy the stated condition.



measures less than  $m\angle 5$

## Example 2

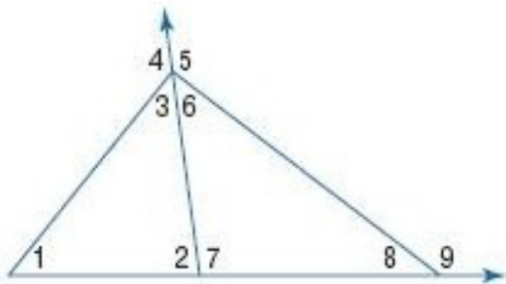
Refer to the figure to list all the angles that satisfy the stated condition.



measures less than  $m\angle 5$   
 $\angle 7, \angle 8$

## Example 2

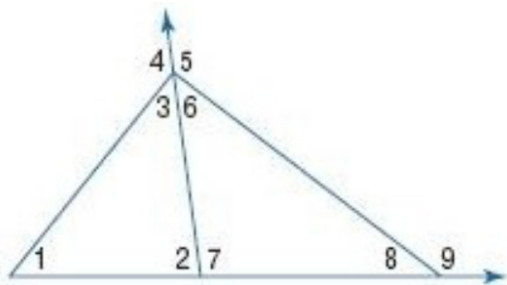
Refer to the figure to list all the angles that satisfy the stated condition.



measures greater than  $m\angle 1$

## Example 2

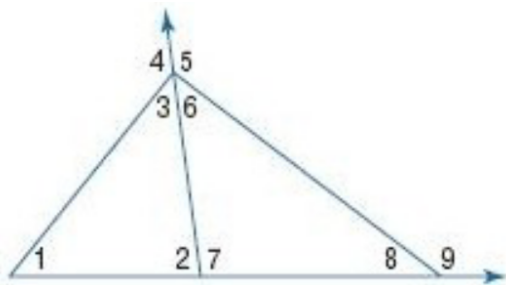
Refer to the figure to list all the angles that satisfy the stated condition.



measures greater than  $m\angle 1$   
 $\angle 4, \angle 7$

## Example 2

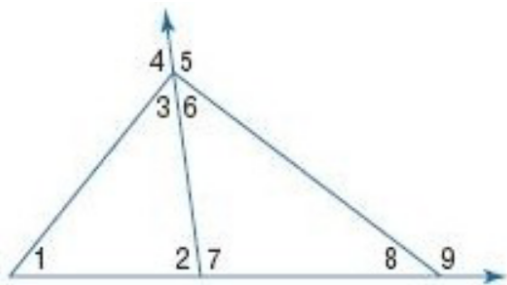
Refer to the figure to list all the angles that satisfy the stated condition.



measures less than  $m\angle 4$

## Example 2

Refer to the figure to list all the angles that satisfy the stated condition.

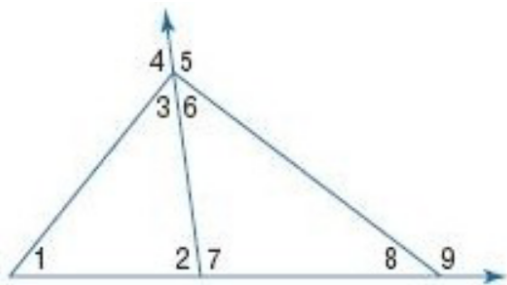


measures less than  $m\angle 4$   
 $\angle 1, \angle 2$



## Example 2

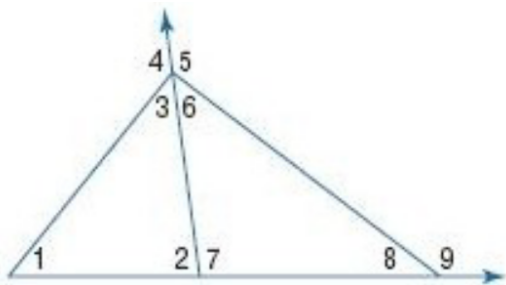
Refer to the figure to list all the angles that satisfy the stated condition.



measures greater than  $m\angle 8$

## Example 2

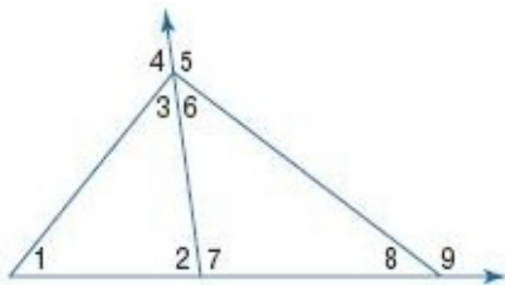
Refer to the figure to list all the angles that satisfy the stated condition.



measures greater than  $m\angle 8$   
 $\angle 2, \angle 5$

## Example 2

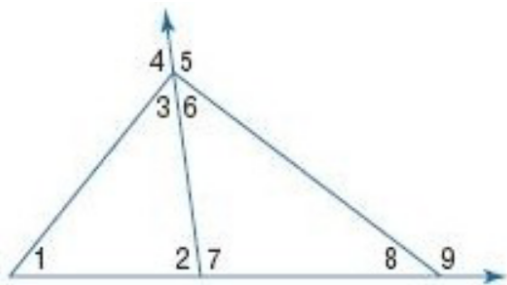
Refer to the figure to list all the angles that satisfy the stated condition.



measures less than  $m\angle 9$

## Example 2

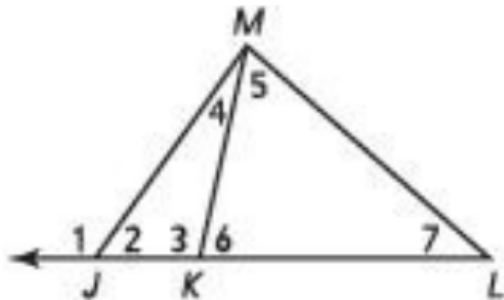
Refer to the figure to list all the angles that satisfy the stated condition.



measures less than  $m\angle 9$   
 $\angle 1, \angle 3, \angle 6, \angle 7$

# Example 3

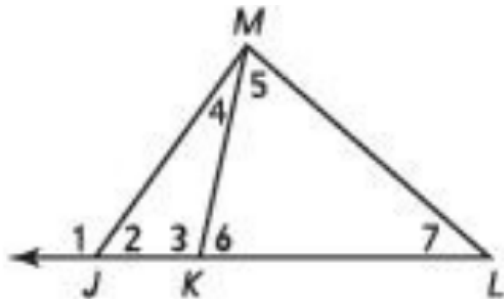
Refer to the figure to determine the inequality symbol that makes the statement correct.



$$m\angle 1 \underline{\hspace{1cm}} m\angle 3$$

# Example 3

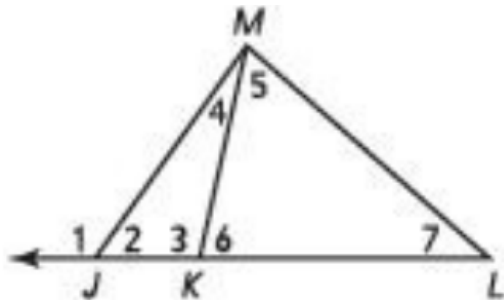
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$$m\angle 1 > m\angle 3$$

# Example 3

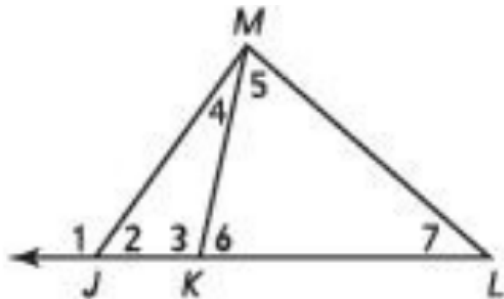
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$$m\angle 5 \underline{\hspace{1cm}} m\angle 3$$

# Example 3

Refer to the figure to determine the inequality symbol that makes the statement correct.

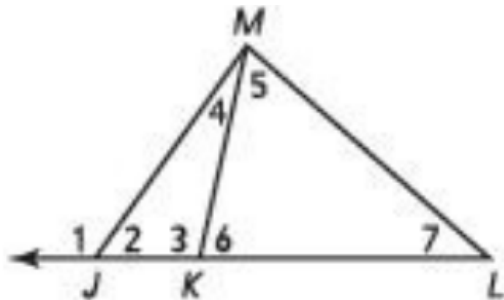


$$m\angle 5 < m\angle 3$$



# Example 3

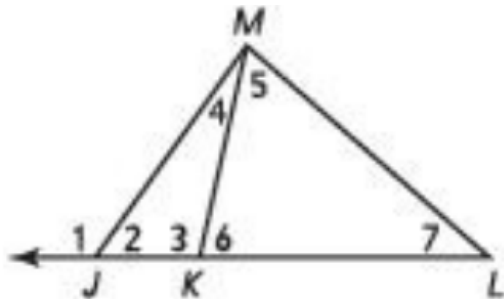
Refer to the figure to determine the inequality symbol that makes the statement correct.



$$m\angle 7 \underline{\hspace{1cm}} m\angle 1$$

# Example 3

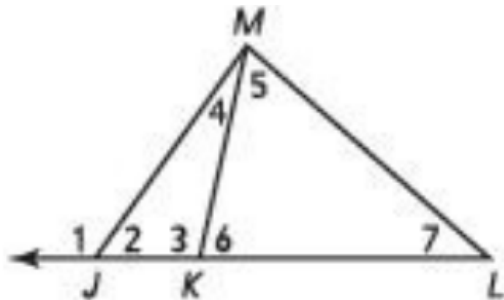
Refer to the figure to determine the inequality symbol that makes the statement correct.



$$m\angle 7 < m\angle 1$$

# Example 3

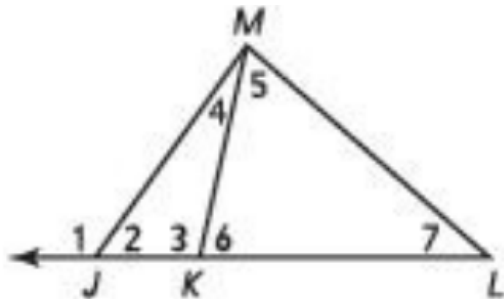
Refer to the figure to determine the inequality symbol that makes the statement correct.



$$m\angle 4 \underline{\hspace{1cm}} m\angle 6$$

# Example 3

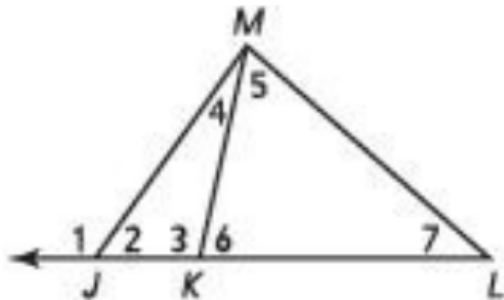
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$$m\angle 4 < m\angle 6$$

# Example 3

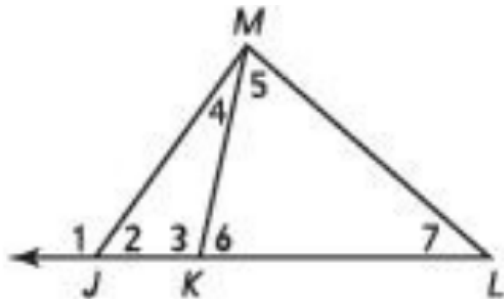
Refer to the figure to determine the inequality symbol that makes the statement correct.



$$m\angle 3 \text{ \_\_\_\_ } m\angle 7$$

# Example 3

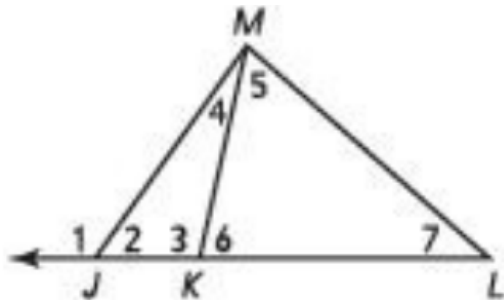
Refer to the figure to determine the inequality symbol that makes the statement correct.



$$m\angle 3 > m\angle 7$$

# Example 3

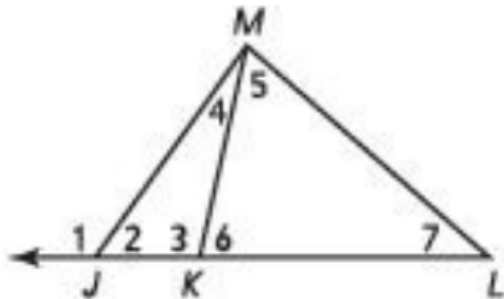
Refer to the figure to determine the inequality symbol that makes the statement correct.



$$m\angle 2 \underline{\hspace{1cm}} m\angle 6$$

# Example 3

Refer to the figure to determine the inequality symbol that makes the statement correct.

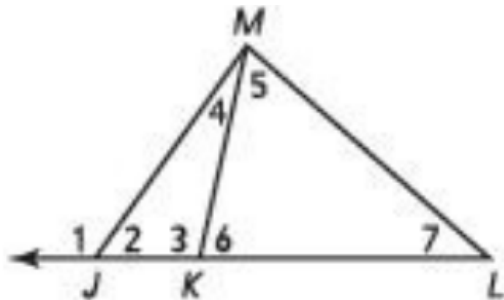


$$m\angle 2 < m\angle 6$$



# Example 3

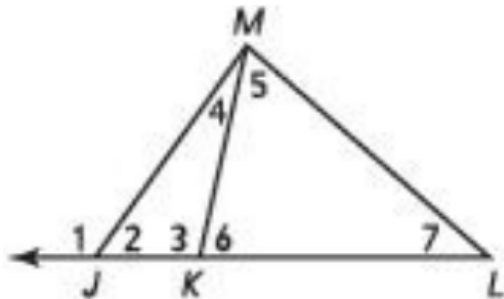
Refer to the figure to determine the inequality symbol that makes the statement correct.



$$m\angle 1 \text{ \_\_\_\_ } m\angle 5$$

# Example 3

Refer to the figure to determine the inequality symbol that makes the statement correct.



$$m\angle 1 > m\angle 5$$

**Thank you for attending  
the virtual class.**