Quiz 4.1: Exterior Angle Inequality Theorem

Multiple Choice: *Choose the letter that corresponds to the correct answer. Write the answer in your answer sheet.*

1. "The measure of an exterior angle of a triangle is greater than the measure of either remote interior angle." This is stated in:

   A. Exterior angle inequality theorem
   C. Triangle inequality theorem
   B. Interior angle inequality theorem
   D. Triangle exterior theorem

2. An interior angle that is not adjacent to the exterior angle is called:

   A. Alternate interior angle
   C. Corresponding interior angle
   B. Consecutive interior angle
   D. Remote interior angle

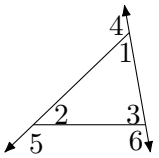
3. The angle between a side of a polygon and an extended adjacent side is called:

   A. Alternate angle
   B. Consecutive angle
   C. Exterior angle
   D. Interior angle

4. Which theorem states that the sum of the lengths of any two sides of a triangle is greater than the length of the third side?

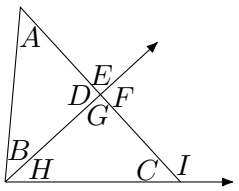
   A. Exterior angle inequality theorem
   C. Triangle inequality theorem
   B. Interior angle inequality theorem
   D. Triangle exterior theorem

5. Based on the figure, what is the interior angle in relation to $\angle 6$?



   A. $\angle 2$
   B. $\angle 3$
   C. $\angle 4$
   D. $\angle 5$

6. Based on the figure, which of the following statements is true?

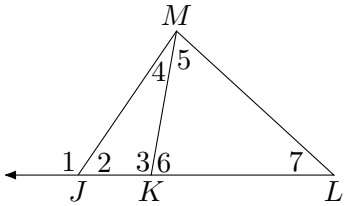


   A. $m\angle E < m\angle A$
   B. $m\angle B > m\angle E$
   C. $m\angle F > m\angle H$
   D. $m\angle C > m\angle F$

7. Which of the following measures **cannot** be used to form a triangle?

   A. $7, 2, 7$
   B. $5, 7, 11$
   C. $5, 8, 13$
   D. $7, 16, 10$

8. Refer to the figure to determine the inequality symbol that makes the statement $m\angle 3 \_\_ m\angle 7$ correct.

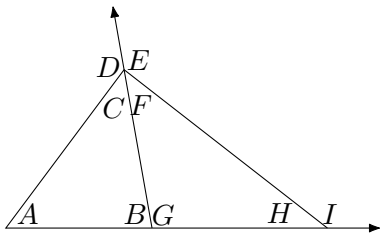


   A. $<$
   B. $>$
   C. $=$
   D. leq

9. Two sides of $\triangle ABC$ have the measures $a = 7, c = 9$. Find the range of possible measures for the third side.

   A. $6 < b < 8$
   B. $2 < b < 16$
   C. $5 < b < 11$
   D. $4 < b < 15$

10. Based on the figure, which of the following angles has a measure that is greater than $m\angle C$?



    A. $\angle A$
    B. $\angle E$
    C. $\angle F$
    D. $\angle I$

Answer Key

1. "The measure of an exterior angle of a triangle is greater than the measure of either remote interior angle." This is stated in:

   Solution:

   A. Exterior angle inequality theorem
   C. Triangle inequality theorem
   B. Interior angle inequality theorem
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   Solution:

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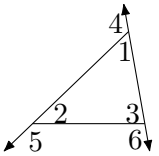

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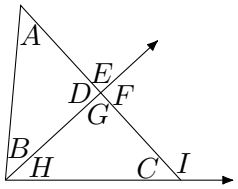

   Solution:

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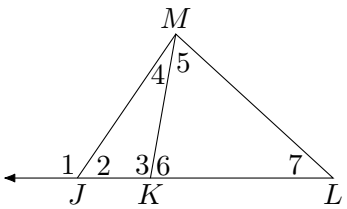

   Solution:

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   B. $>$
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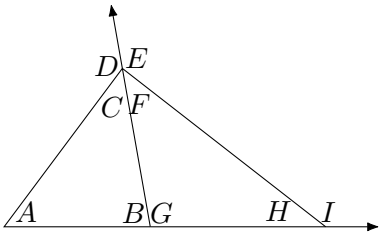

Solution:

A. $\angle A$ B. $\angle E$ C. $\angle F$ D. $\angle I$