NAME: _____ SECTION: _____

LESSON 2: SIDE- ANGLE RELATIONSHIP

I. OBJECTIVES

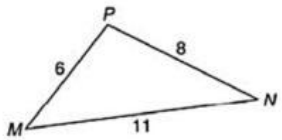
The learner illustrates theorems on triangle inequalities (Exterior Angle Inequality Theorem, Triangle Inequality Theorem, Hinge Theorem). ***M8GE-IVa-1***

- The learner applies the Side-Angle and Angle-Side Inequality theorem to determine the longest side and largest angle of a triangle.

II. LESSON

SIDE-ANGLE INEQUALITY THEOREM

If one side of a triangle is longer than the second side, then the measure of the angle opposite the longer side is greater than the measure of the angle opposite the shortest side.

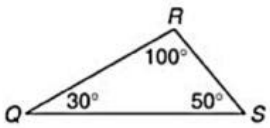


Longest side: $\overline{MN}$	Opposite angle of $\overline{MN}$: $\angle P$
Shortest side: $\overline{PM}$	Opposite angle of $\overline{PM}$: $\angle N$

Refer to ΔMPN, arrange the angles in decreasing order. $\angle P, \angle M, \angle N$

ANGLE-SIDE INEQUALITY THEOREM

If one side of a triangle is longer than the second side, then the measure of the angle opposite the longer side is greater than the measure of the angle opposite the shortest side.

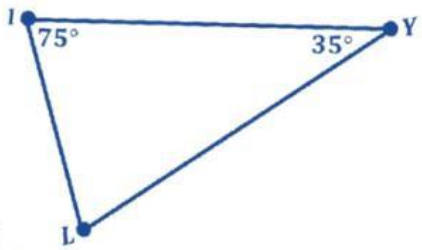


Largest angle: $\angle R$	Opposite side of $\angle R$: $\overline{QS}$
Smallest angle: $\angle Q$	Opposite side of $\angle Q$: $\overline{RS}$

Refer to ΔMPN, arrange the sides in decreasing order. $\overline{RS}, \overline{QR}, \overline{SQ}$

III. ACTIVITY

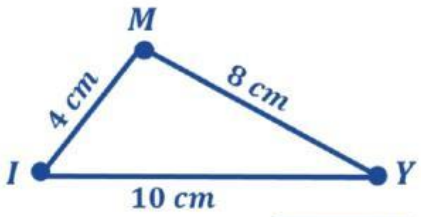
I. Given the ΔILY, answer the following questions.



1. What is the largest angle? ∠ ____
2. What is the smallest angle? ∠ ____
3-5. Arrange the side in order from the **GREATEST** to the **LEAST** measure.

____ ____ ____

II. Given the ΔIMY, answer the following questions.



1. What is the longest side? ____
2. What is the shortest side? ____
3-5. Arrange the angles in order from the **GREATEST** to the **LEAST** measure. ∠ ____ ∠ ____ ∠ ____

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