

NAME: \_\_\_\_\_

Math \_\_\_\_\_, Period \_\_\_\_\_

Mr. Rogove

Date: \_\_\_\_\_

**LEARNING OBJECTIVE:** We will calculate angle measures of parallel lines that are cut by transversals (G8M2L9)

**CONCEPT DEVELOPMENT:**

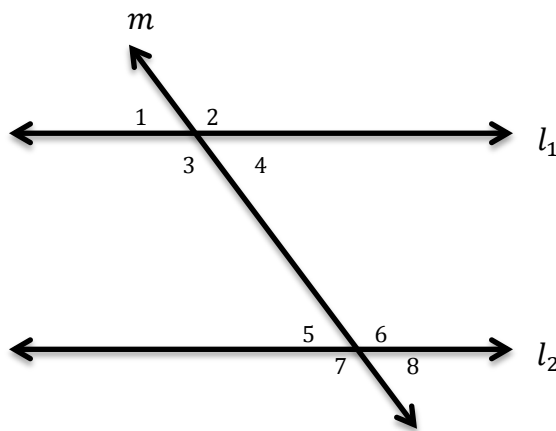
**Transversal:** A line that cuts through a pair of parallel lines.

**Vertical Angles:** The opposite angles created by the intersection of the transversal and a parallel line.

**Corresponding Angles:** Angles on the same side of the transversal in corresponding positions.

**Alternate Interior Angles:** Angles on opposite sides of the transversal on the inside of the parallel lines.

**Alternate Exterior Angles:** Angles on opposite sides of the transversal on the outside of the parallel lines.



**Theorem:** When parallel lines are cut by a transversal, then the pairs of corresponding angles are congruent, the pairs of alternate interior angles are congruent, and the pairs of alternate exterior angles are congruent.

**Converse of the Above Theorem:** If you know that corresponding angles (or alternate interior or alternate exterior) are congruent then you can be sure that the lines cut by a transversal are parallel.

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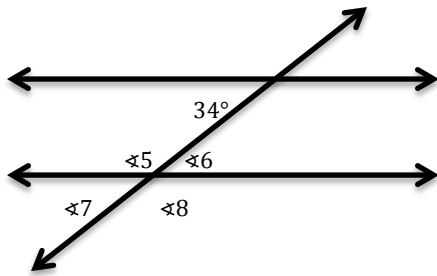
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**GUIDED PRACTICE:**

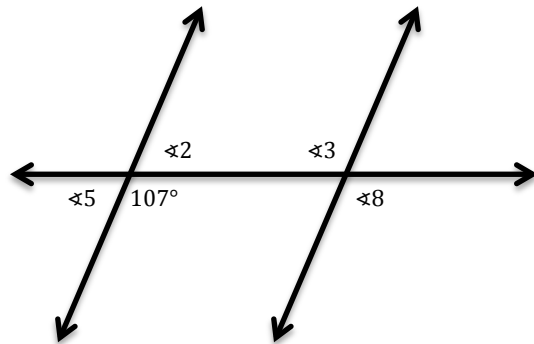
**Steps for Determining the Angle Measures Involving Parallel Lines**

1. Identify all corresponding, alternate interior and alternate exterior angles.
2. Determine the measure of angles according to the theorem described on page 1.

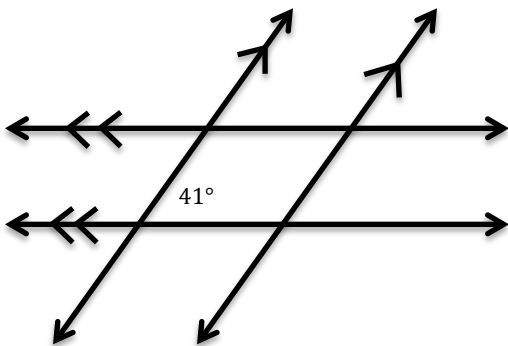
What are the angle measures for  $\angle 5$ ,  $\angle 6$ ,  $\angle 7$ , and  $\angle 8$ ?



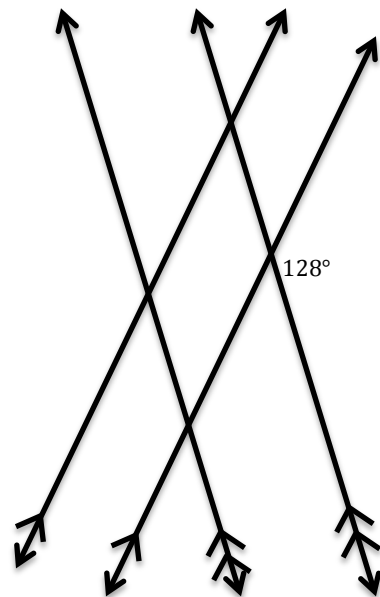
What are the angle measures for  $\angle 2$ ,  $\angle 3$ ,  $\angle 5$ , and  $\angle 8$ ?



What are the missing angle measures?



Fill in the missing angle measures.



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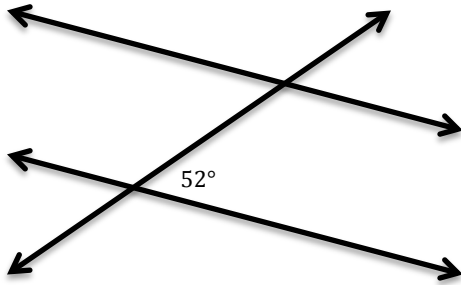
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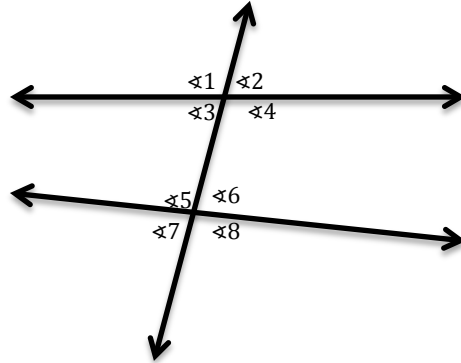
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**INDEPENDENT PRACTICE:**

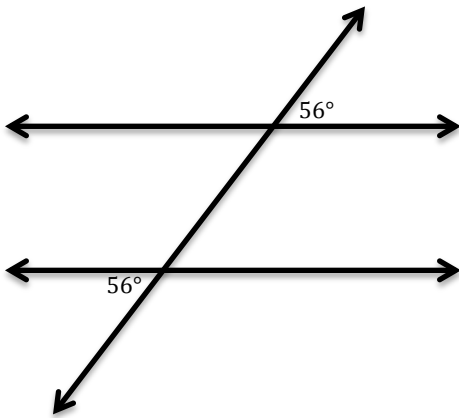
Label and identify the pairs of corresponding angles. Determine the angle measurements.



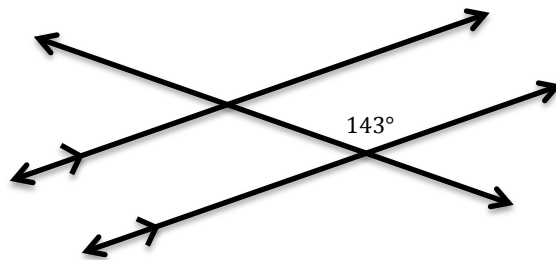
Is angle  $\sphericalangle 2$  congruent to  $\sphericalangle 6$ ? How can you tell?



Fill in the rest of the angle measurements, and make a claim about the lines that are cut by the transversal.



What are the rest of the angle measurements?



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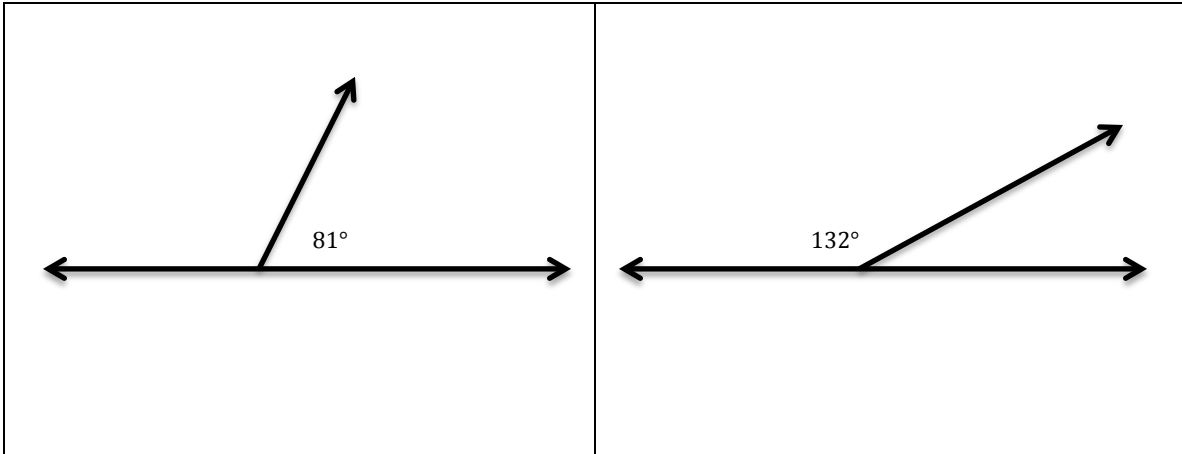
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**ACTIVATING PRIOR KNOWLEDGE:**

We know how to calculate the angle measures of corresponding angles.



**CLOSURE:**

Exit Ticket From lesson 12 Engage NY.

**TEACHER NOTES:**

Homework is from Drexel Math Forum—Problem of the Week #3231-Analyzing Angles