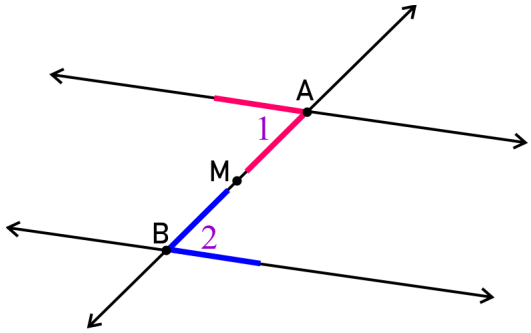
More Angle Relationships with Parallel Lines

1. Two parallel lines are cut by a transversal. Point M is the midpoint of $\overline{AB}$.

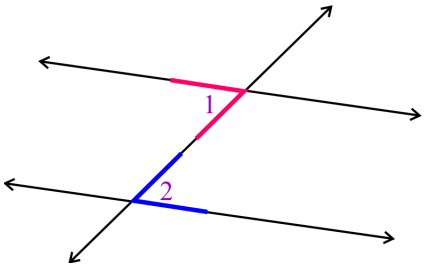
   How could you use a rigid transformation to prove that angle 2 is congruent to angle 1?

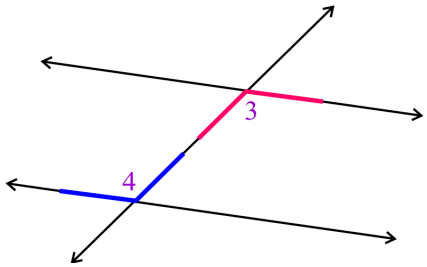
   You can use transparent paper to help you investigate this.



Angles 1 and 2 are called **alternate interior angles**. They are on alternate sides of the transversal and in between the two parallel lines — in an "inner" position in relation to the whole diagram.

Angles 3 and 4 are also alternate interior angles. **Alternate interior angles are congruent.**

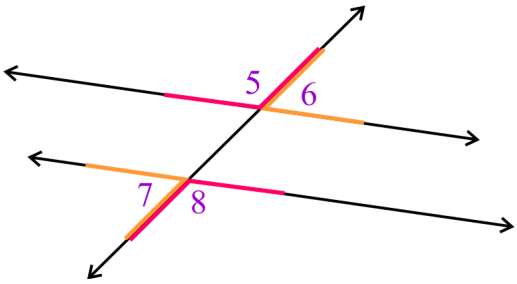




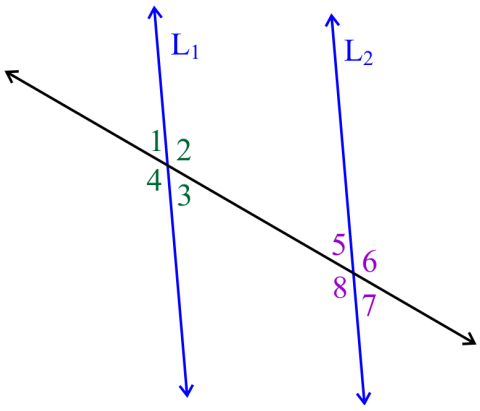
Angles 5 and 8 are **alternate exterior angles**. They are on alternate sides of the transversal and in an "outer" position in relation to the whole diagram.

Angles 6 and 7 are also alternate exterior angles.

Alternate exterior angles are congruent.



2. Lines L_1 and L_2 are parallel. Fill in the blanks, describing the types of angles formed.



Angles 5 and 7 are _____ angles.

Angles 3 and 5 are _____ angles.

Angles 1 and 7 are _____ angles.

Angles 2 and 6 are _____ angles.

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