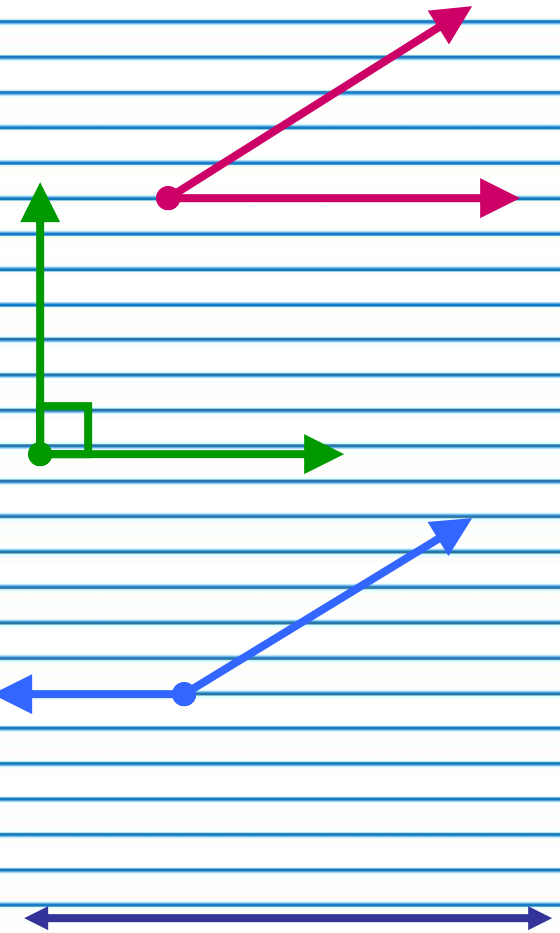


LINE AND ANGLE RELATIONSHIPS

TYPES OF ANGLES

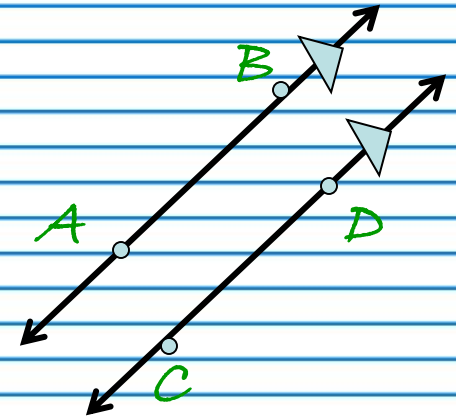
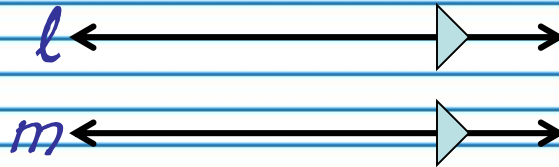
- **Acute Angles** have measures less than 90° .
- **Right Angles** have measures equal to 90° .
- **Obtuse Angles** have measures between 90° and 180° .
- **Straight Angles** have measures equal to 180° .



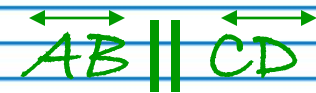
PARALLEL LINES

- **Def:** Lines that do not intersect. Parallel lines are always the same distance apart.

- **Illustration:**



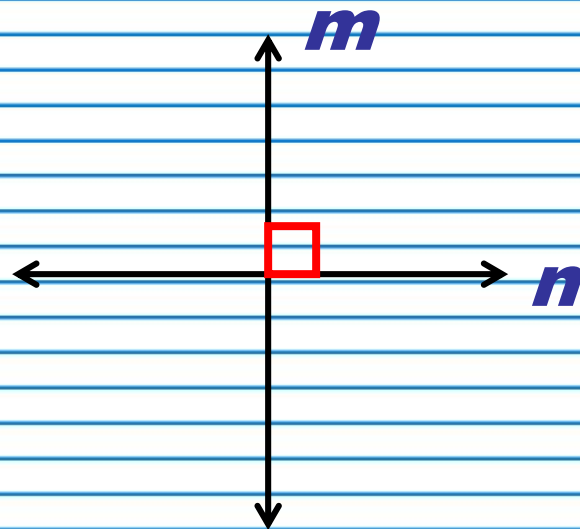
- **Notation:** $l \parallel m$



PERPENDICULAR LINES

- **Def:** Lines that intersect to form a right angle.

- **Illustration:**



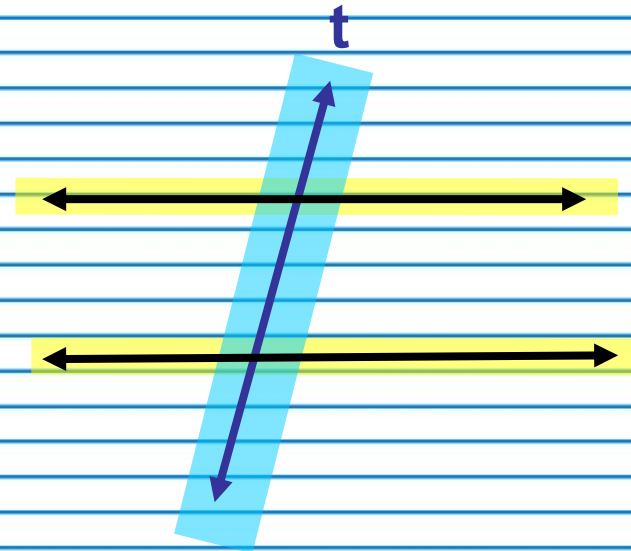
- **Notation:** $m \perp n$

- **Key Fact:** 4 right angles are formed.

Transversal

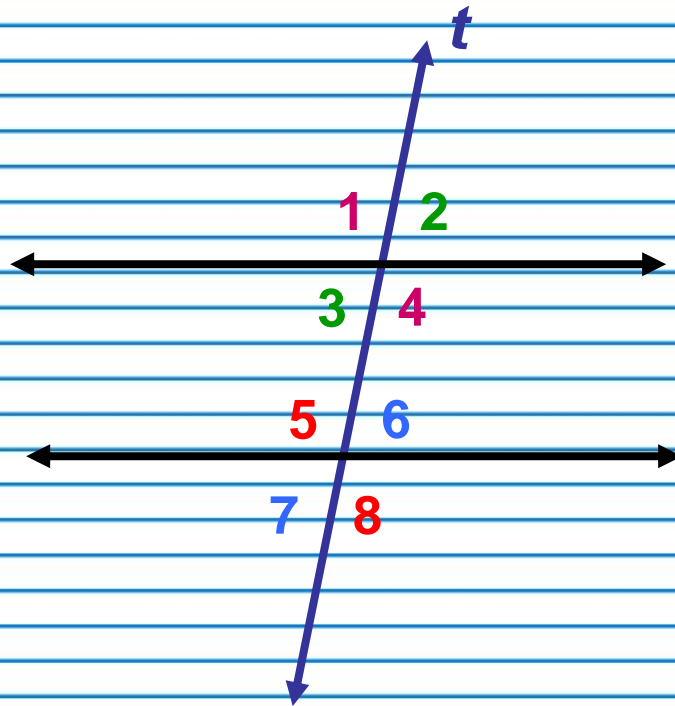
- **Def:** A line that intersects two lines at different points.

- **Illustration:**



Vertical Angles

- Two angles that are opposite angles.



$$\angle 1 \cong \angle 4$$

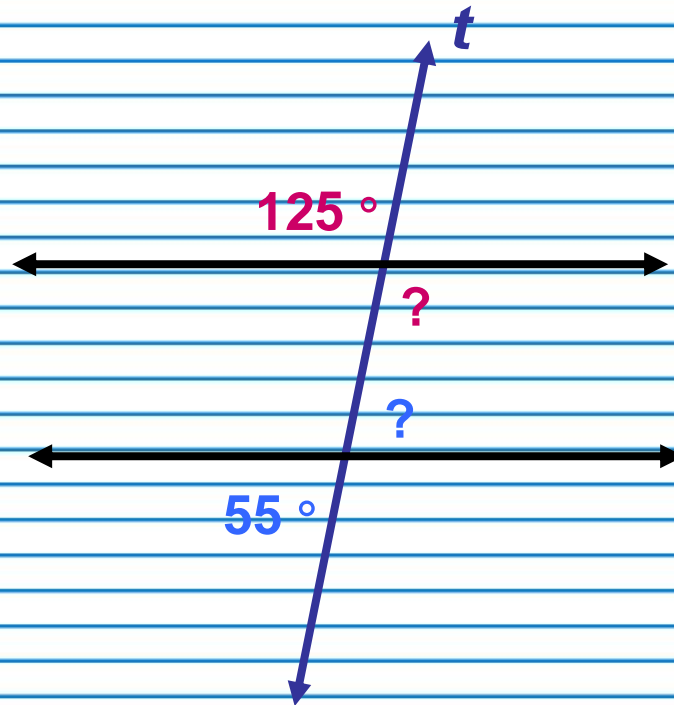
$$\angle 2 \cong \angle 3$$

$$\angle 5 \cong \angle 8$$

$$\angle 6 \cong \angle 7$$

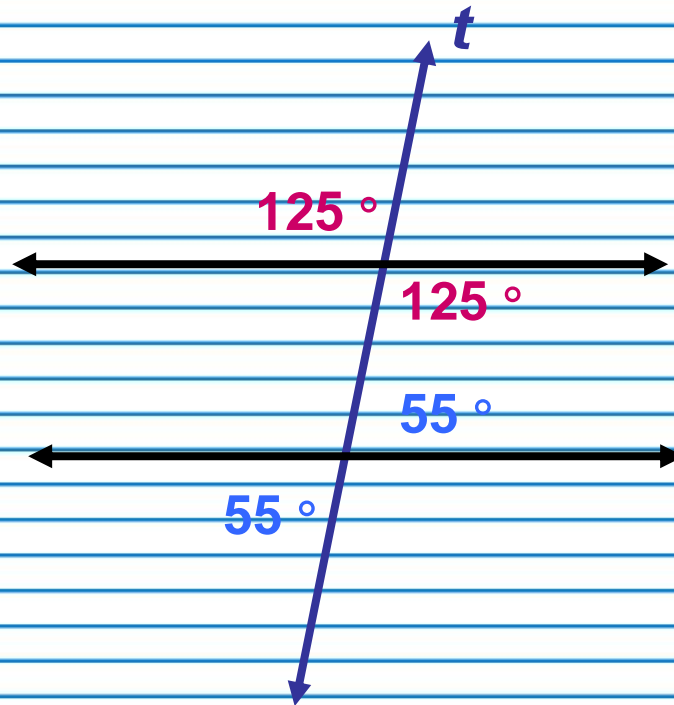
Vertical Angles

- Find the measures of the missing angles



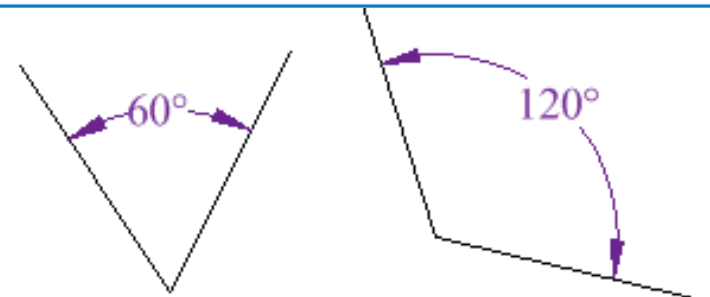
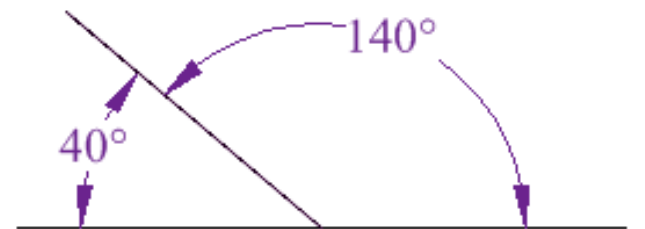
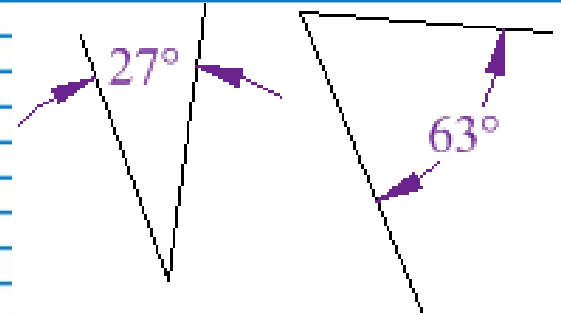
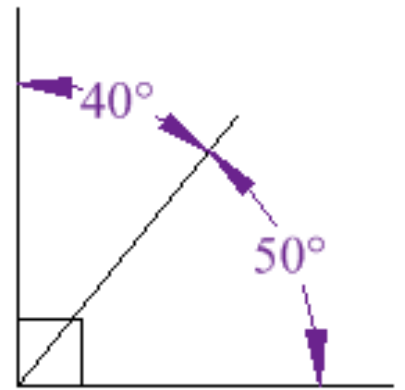
Vertical Angles

- Find the measures of the missing angles



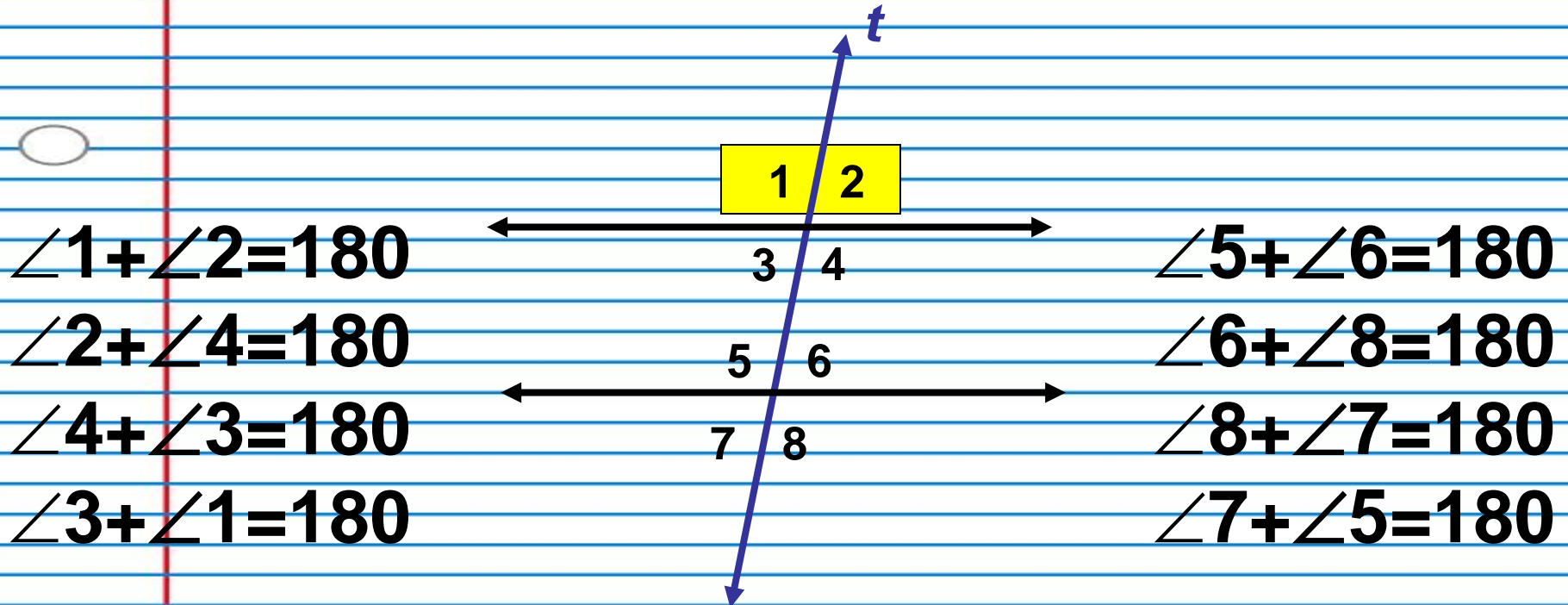
Angle Relationships

- **Complementary Angles** are two angles whose sum is 90° .
- **Supplementary Angles** are two angles whose sum is 180° .
- **Angles do not have to be Adjacent to be Complementary or Supplementary.**
- **Adjacent Angles** are two angles that share a common side.



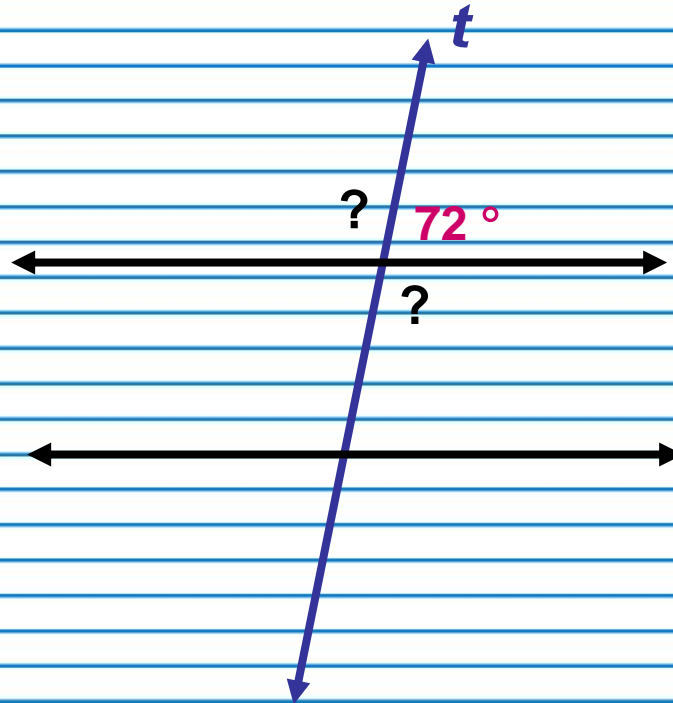
Supplementary Angles/ Linear Pair

- Two angles that form a **line** (sum=180°)



Supplementary Angles/ Linear Pair

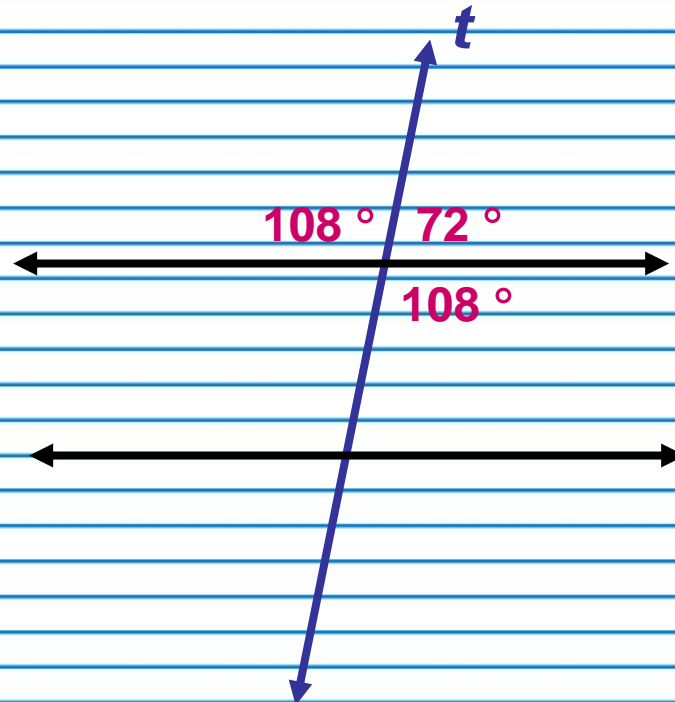
- Find the measures of the missing angles



$$180 - 72$$

Supplementary Angles/ Linear Pair

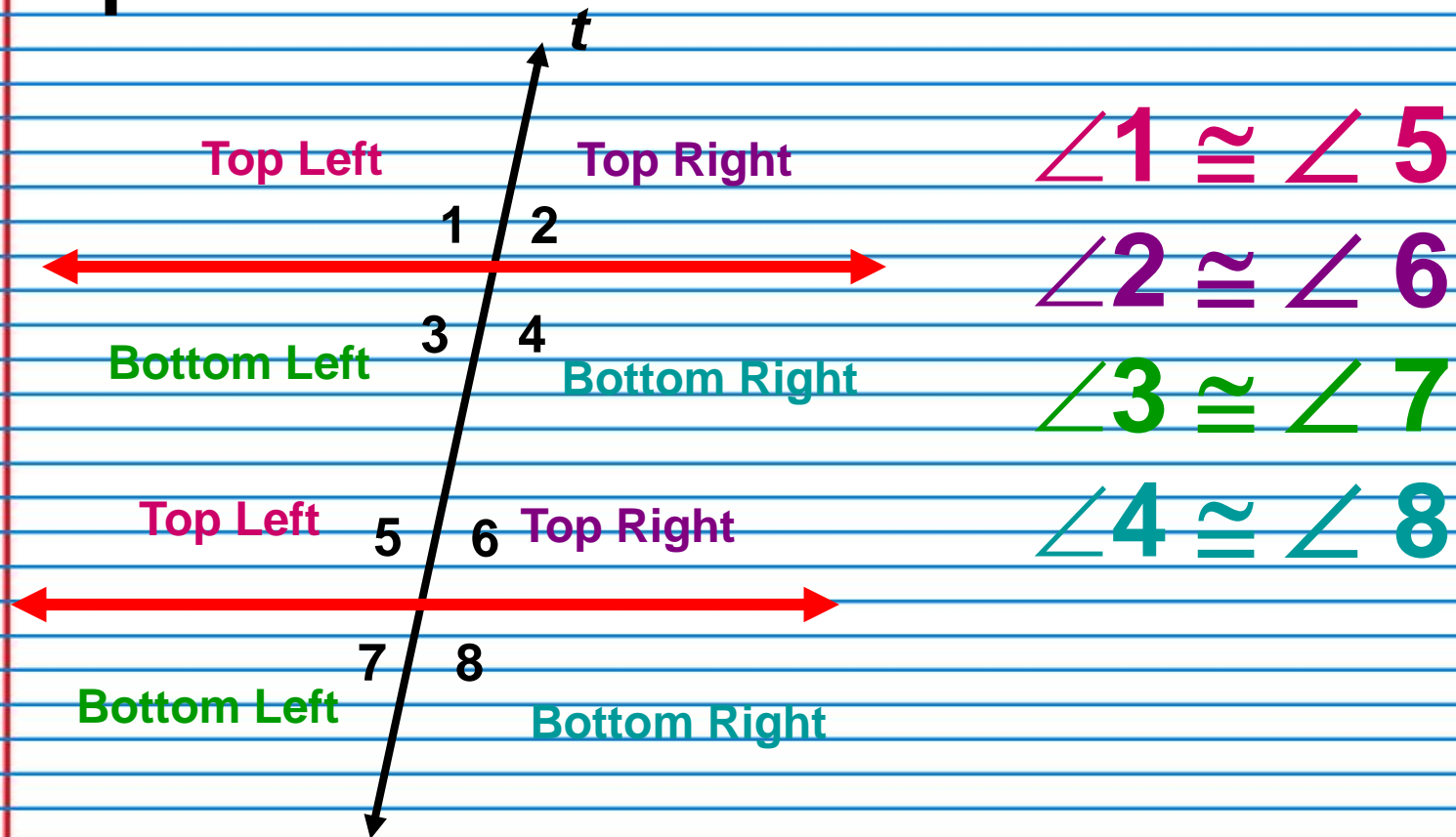
- Find the measures of the missing angles



$$180 - 72$$

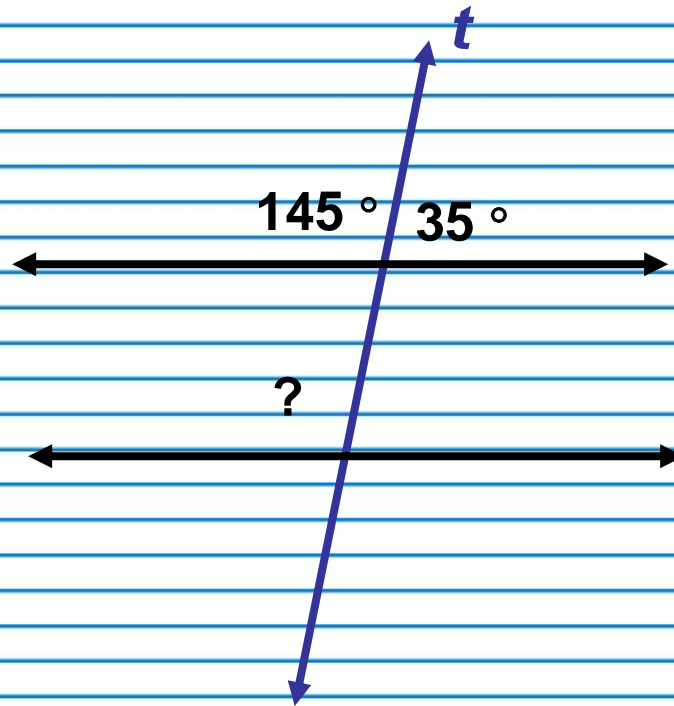
Corresponding Angles

- Two angles that occupy corresponding positions.



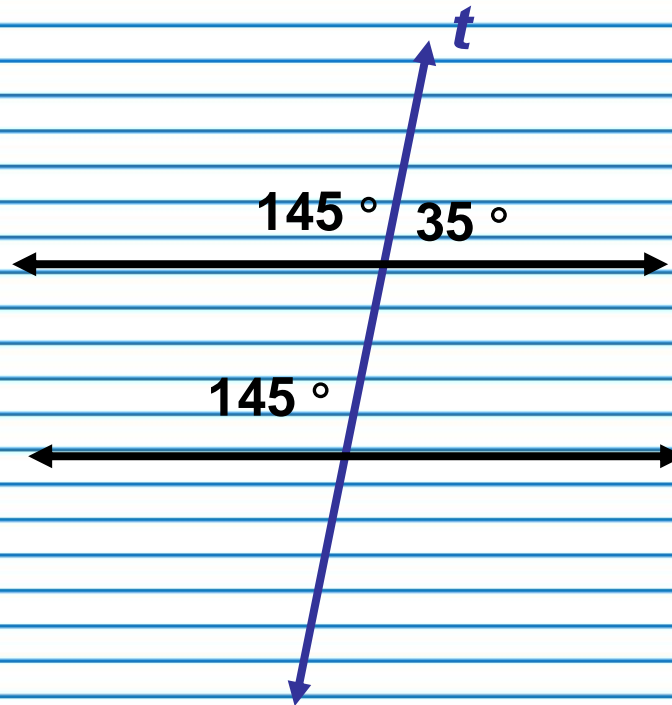
Corresponding Angles

- Find the measures of the missing angles



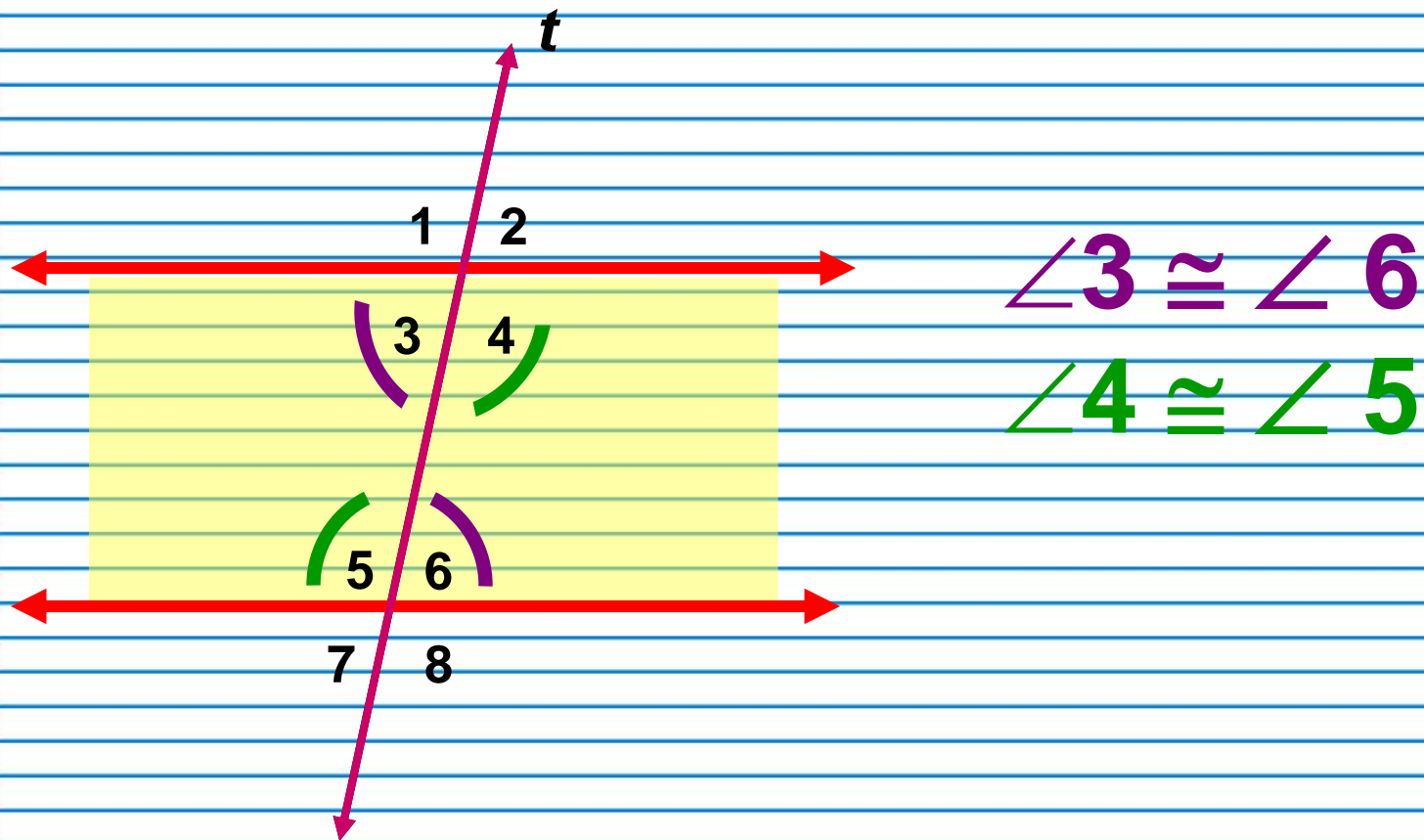
Corresponding Angles

- Find the measures of the missing angles



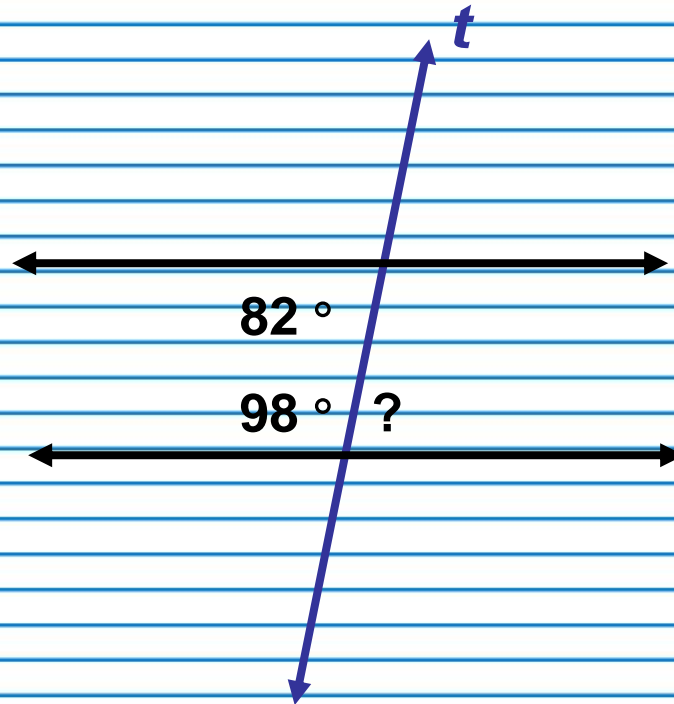
Alternate Interior Angles

- Two angles that lie between parallel lines on opposite sides of the transversal



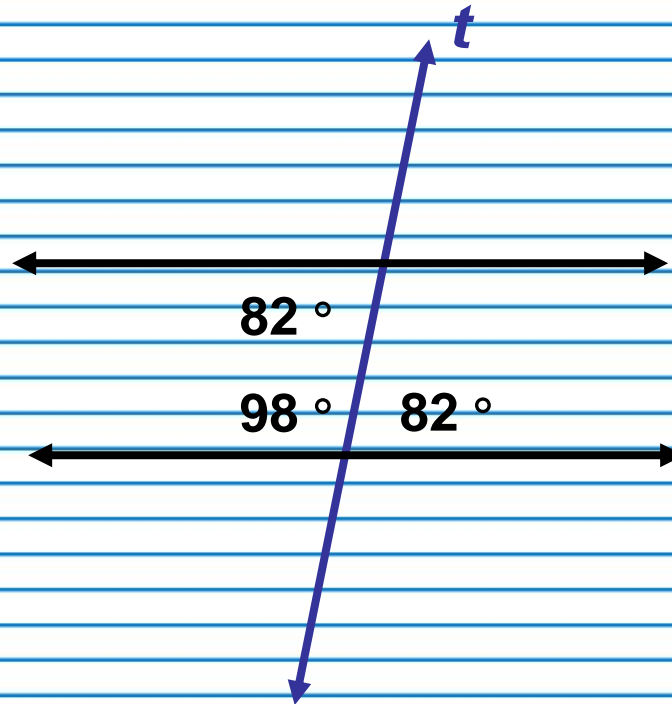
Alternate Interior Angles

- Find the measures of the missing angles



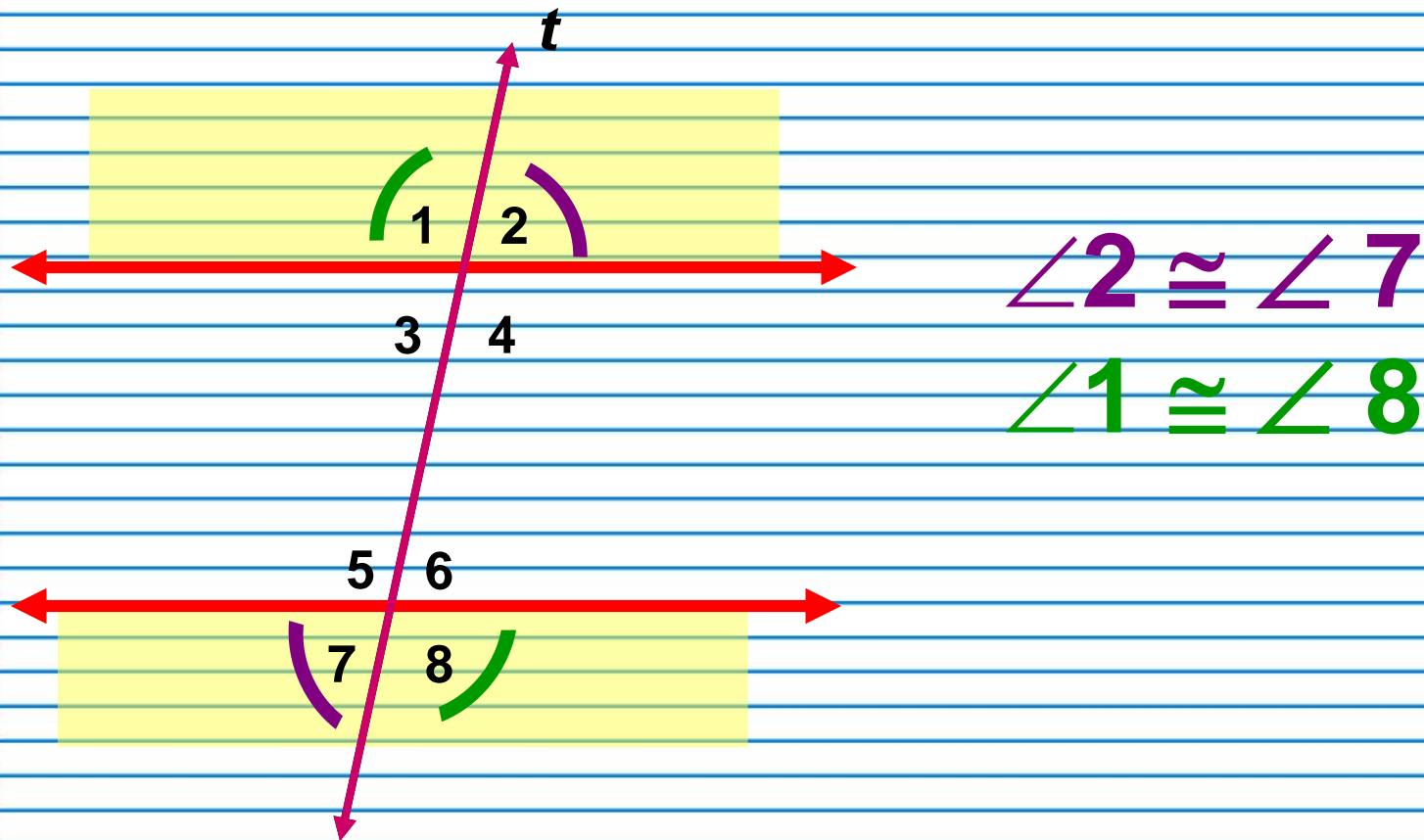
Alternate Interior Angles

- Find the measures of the missing angles



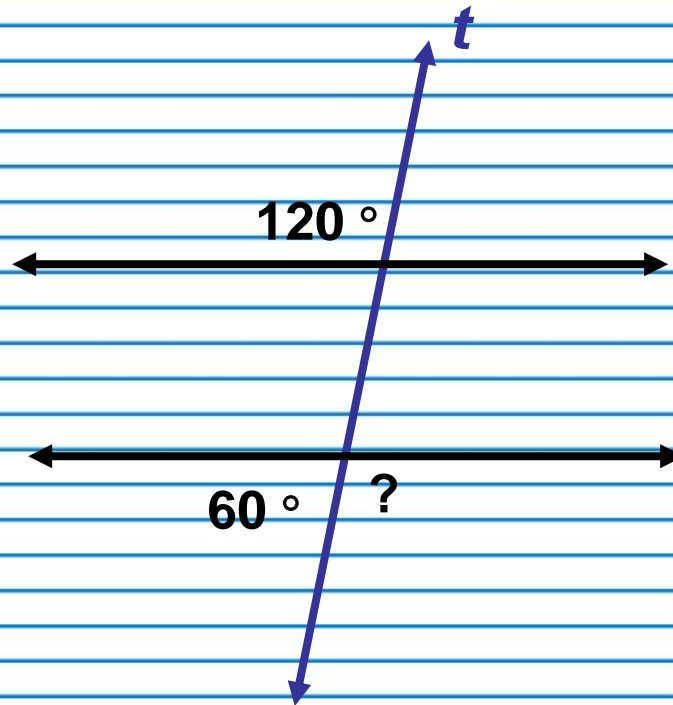
Alternate Exterior Angles

- Two angles that lie outside parallel lines on opposite sides of the transversal



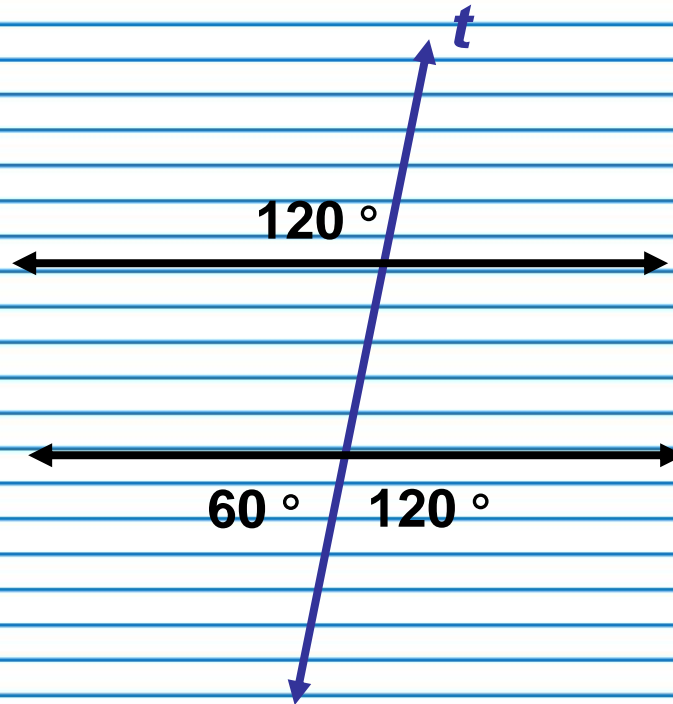
Alternate Exterior Angles

- Find the measures of the missing angles



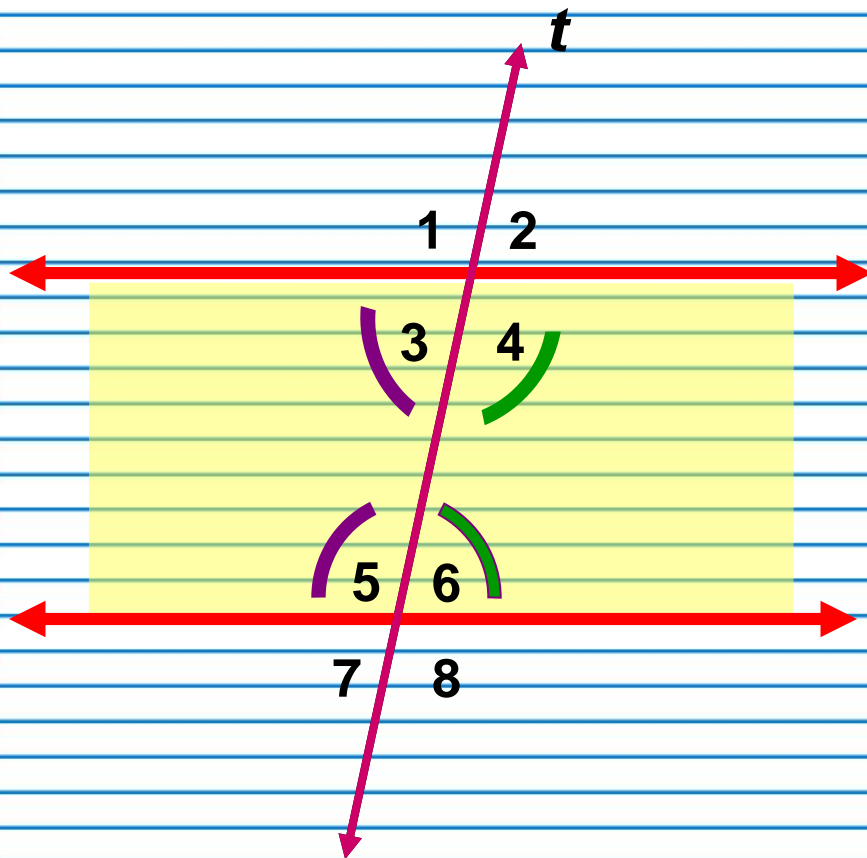
Alternate Exterior Angles

- Find the measures of the missing angles



Consecutive Interior Angles

- Two angles that lie between parallel lines on the same sides of the transversal

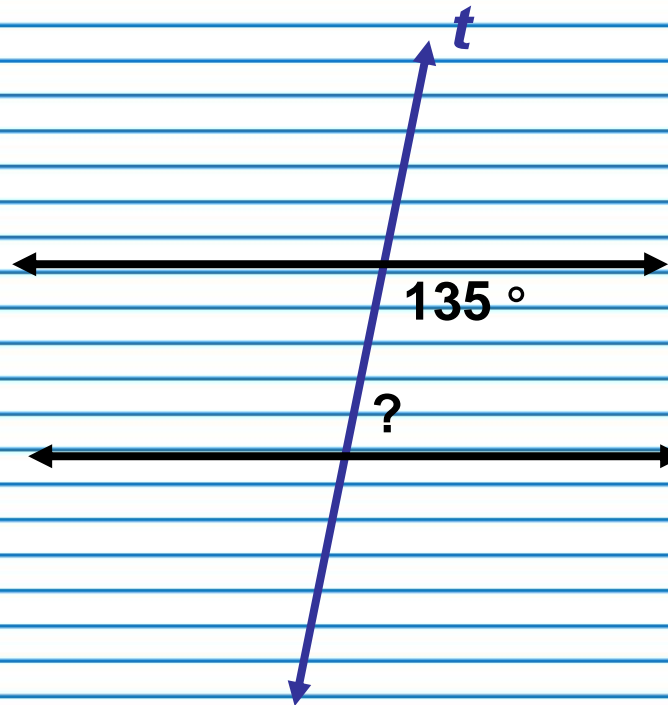


$$\angle 3 + \angle 5 = 180$$

$$\angle 4 + \angle 6 = 180$$

Consecutive Interior Angles

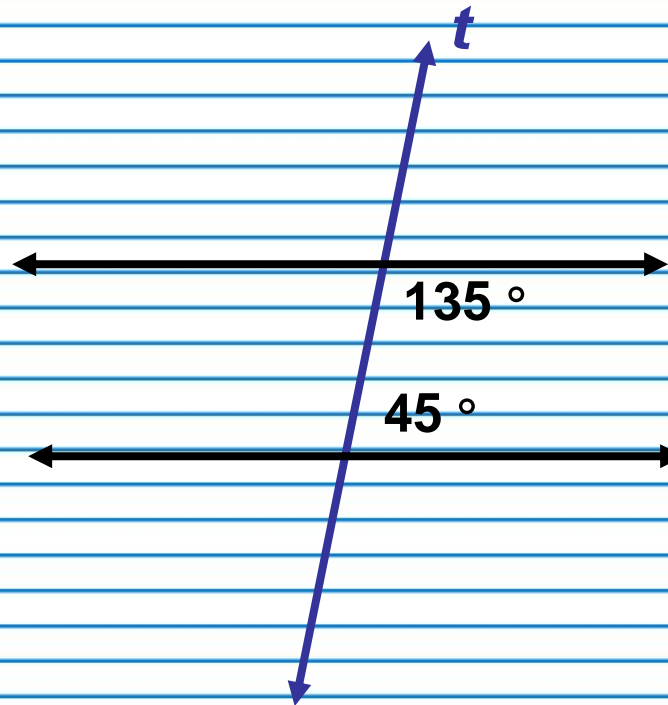
- Find the measures of the missing angles



$$180 - 135$$

Consecutive Interior Angles

- Find the measures of the missing angles



$$180 - 135$$

This presentation is a modified version of the Slideshow: “[Lines and Angles 2](#)” by Miss Patel. The original Slideshow Presentation can be found at www.worldofteaching.com