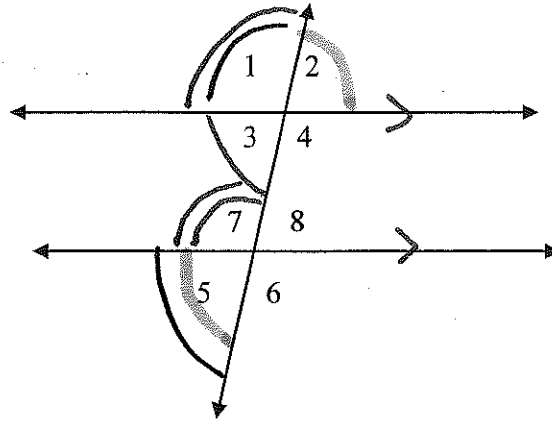


Cornell Notes

Title of Notes: **Properties of Parallel Lines**

Main Ideas/Questions



Types of Angles:

Alternate:
alternating
sides of the
transversal

Alternate Interior Angles are formed when a transversal intersects two lines and alternate interior angles are on opposite sides of the transversal and on the inside of the given lines. Ex $\angle 3 \text{ \& } \angle 8$; $\angle 4 \text{ \& } \angle 7$

Alternate Exterior Angles are formed when a transversal intersects two lines and alternate exterior angles are on opposite sides of the transversal and on the outside of the given lines. Ex $\angle 2 \text{ \& } \angle 5$; $\angle 1 \text{ \& } \angle 6$

Interior:
In between the
two lines

Same-Side Interior Angles lie on the same side of the transversal and on the inside of the given lines. Ex $\angle 3 \text{ \& } \angle 7$; $\angle 4 \text{ \& } \angle 8$

Same-side:
same side of
the transversal

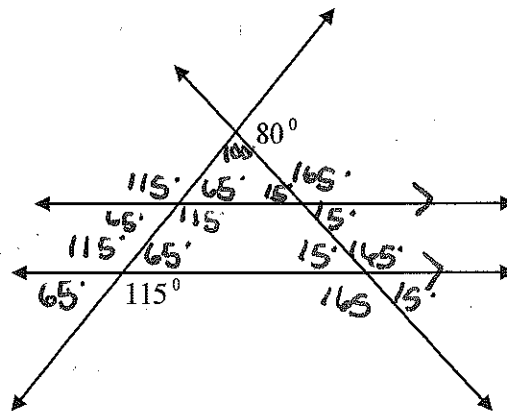
Same-Side Exterior Angles lie on the same side of the transversal and on the outside of the given lines. Ex $\angle 1 \text{ \& } \angle 5$; $\angle 2 \text{ \& } \angle 6$

Exterior: outside
of the two lines
corresponding:
same position

Corresponding Angles lie on the same side of the transversal and on the same side of the given line. Ex $\angle 1 \text{ \& } \angle 7$; $\angle 3 \text{ \& } \angle 5$; $\angle 2 \text{ \& } \angle 8$; $\angle 4 \text{ \& } \angle 6$

Practice

Find the missing angles



Cornell Notes

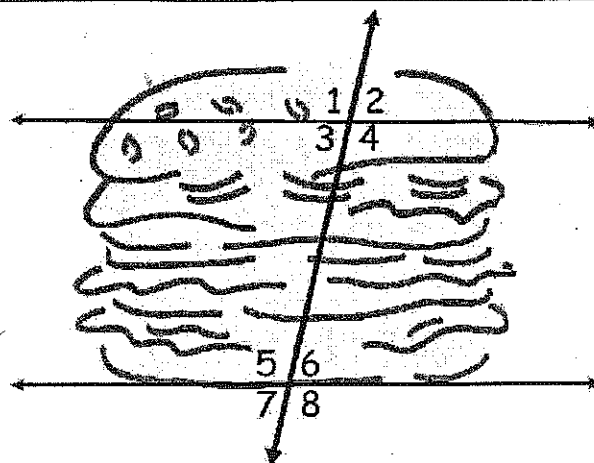
Name: _____

Date: _____

Main Ideas/Questions

Title of Notes: **Properties of Parallel Lines**

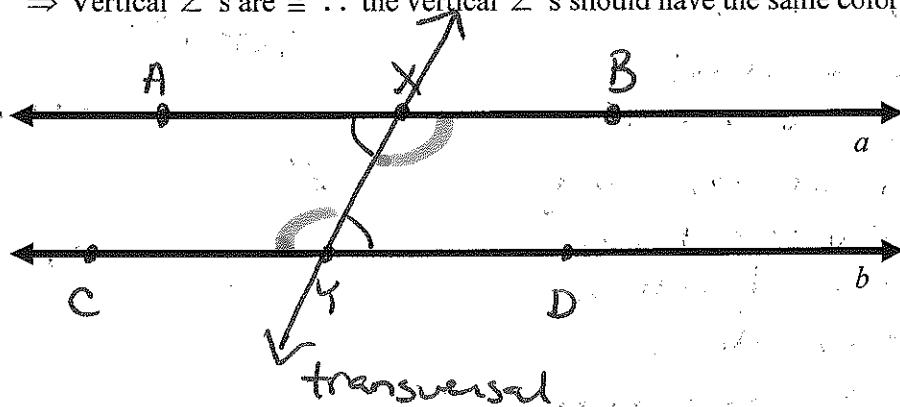
Parallel Lines are lines that do not intersect



A Transversal is a line that intersects two lines at two points

Proving The Angle Relationships with Parallel Lines

- ⇒ Add points A and B to line *a*
- ⇒ Add points C and D to line *b*
- ⇒ Draw transversal *t* with a positive slope (hint: increasing)
- ⇒ Label the intersections of line *a* and *b* with transversal *t* -- X and Y.
- ⇒ Color $\angle AXY$ & $\angle XYD$ the same color
- ⇒ Color $\angle BXY$ & $\angle CYX$ the same color.
- ⇒ Vertical \angle 's are \cong \therefore the vertical \angle 's should have the same color.



I. Angle Relationship

We can color code the angles to determine the relationship between the angles.

- Same color mean the angles are \cong (congruent)
- Different color means their sum is 180° \therefore the angles are Supplementary. (Hint: $\angle CYX$ & $\angle XYD$ form a straight line)