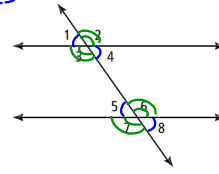


"Math" 11.1 Angles, Lines and Transversals

1. Topic Opener

Which angles have equal measures? Justify your reasoning.

Vertical Angles
 $\angle 1 = \angle 4$
 $\angle 5 = \angle 8$
 $\angle 2 = \angle 3$
 $\angle 6 = \angle 7$

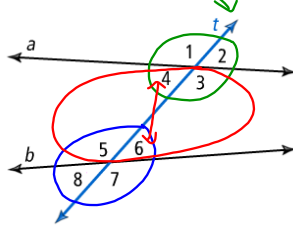


Reflect

Where have you seen angles like these in the real world? Explain.

2. KEY CONCEPT Information

A **transversal** is a line that intersects two or more lines at different points. In the diagram, line t is a transversal.



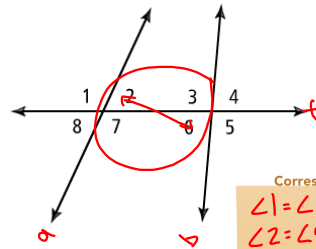
Corresponding angles lie on the same side of a transversal and in corresponding positions.

$\angle 1 = \angle 5$ $\angle 4 = \angle 8$
 $\angle 2 = \angle 6$ $\angle 3 = \angle 7$

Alternate interior angles lie within a pair of lines and on opposite sides of a transversal.

$\angle 4 = \angle 6$
 $\angle 3 = \angle 5$

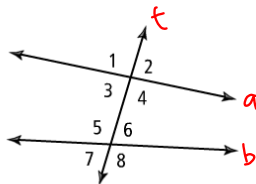
3. Help your teacher classify angles:



Corresponding	Alternate Interior
$\angle 1 = \angle 3$ $\angle 2 = \angle 4$ $\angle 7 = \angle 5$ $\angle 8 = \angle 6$	$\angle 2 = \angle 6$ $\angle 3 = \angle 7$

4. Complete Example #1:

Which pairs of angles are corresponding angles?

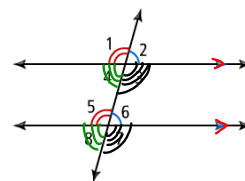


- I. $\angle 3$ and $\angle 7$
- II. $\angle 1$ and $\angle 2$
- III. $\angle 2$ and $\angle 6$

5. Study the next Example's Intro:

Intro

When a transversal intersects two parallel lines, corresponding angles are congruent. Congruent angles have equal measures. You can mark angles with arcs to show that they are congruent.

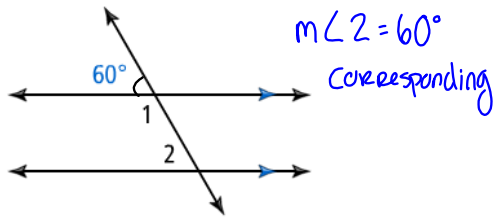


6. Complete Example #2:

Got It?

What is $m\angle 2$?

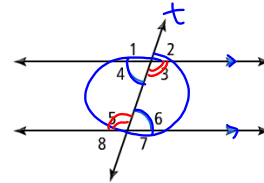
$m\angle 2$
↑
measure



7. Study the next example's Intro:

Intro

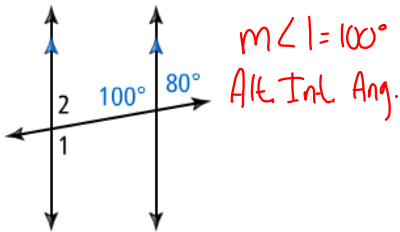
When a transversal intersects two parallel lines, alternate interior angles are congruent.



8. Complete Example #3 part 1:

Got It?

What is $m\angle 1$?

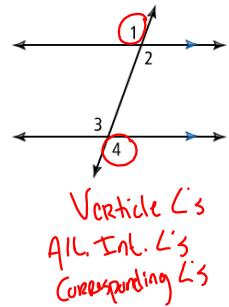


9. Complete Example #3 part 2:

Got It?

Make a conjecture about the relationship between $\angle 1$ and $\angle 4$. Justify your reasoning.

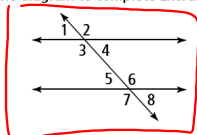
$\angle 1 = \angle 3 \rightarrow$ Corresponding
 $\angle 3 = \angle 4 \rightarrow$ Vertical
 $\therefore \angle 1 = \angle 4$



10. Close and Check.....

Do you know HOW?

Use the diagram to complete Exercises 1-4.



1. Name the pairs of corresponding angles.

- $\angle 5 = \angle 1$ $\angle 4 = \angle 8$
- $\angle 2 = \angle 6$ $\angle 3 = \angle 7$

2. Name the pairs of alternate interior angles.

- $\angle 4 = \angle 5$ $\angle 3 = \angle 6$

3. If $m\angle 4 = 50^\circ$, what is $m\angle 8$?

50° Corresponding

4. If $m\angle 6 = 130^\circ$, what is $m\angle 3$?

130° Alt. Int.