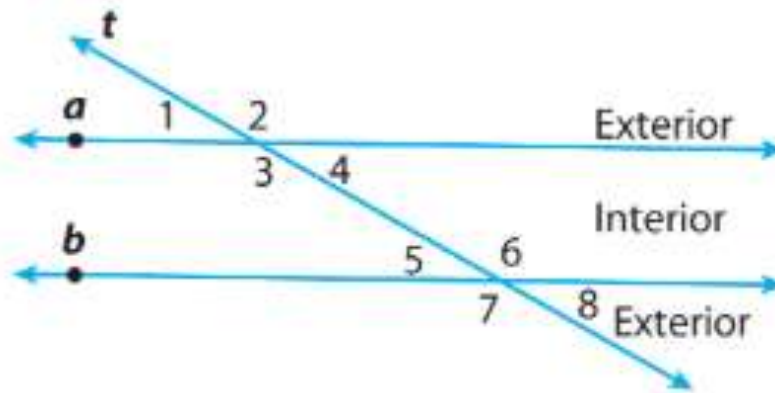


## Lesson: Angle Relationships (Day 2)

# Parallel Lines and Transversals

A **transversal** is a line that intersects two lines in the same plane at two different points. Transversal  $t$  and lines  $a$  and  $b$  form eight angles.



### Angle Pairs Formed by a Transversal

### Notes

Term	Example
<b>Corresponding angles</b> lie on the same side of the transversal $t$ , on the same side of lines $a$ and $b$ .	$\angle 1$ and $\angle 5$
<b>Alternate interior angles</b> are nonadjacent angles that lie on opposite sides of the transversal $t$ , between lines $a$ and $b$ .	$\angle 3$ and $\angle 6$
<b>Alternate exterior angles</b> lie on opposite sides of the transversal $t$ , outside lines $a$ and $b$ .	$\angle 1$ and $\angle 8$
<b>Same-side interior angles</b> lie on the same side of the transversal $t$ , between lines $a$ and $b$ .	$\angle 3$ and $\angle 5$

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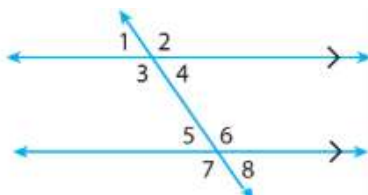


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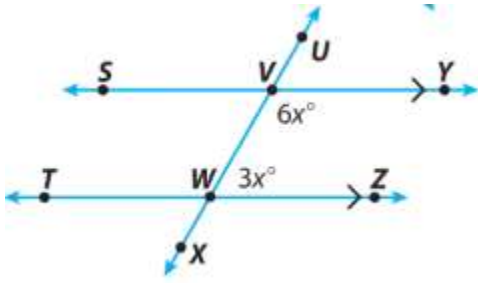
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**Example:** In the diagram below the  $m\angle 7 = 125^\circ$ . Find all other angles and justify your answers.

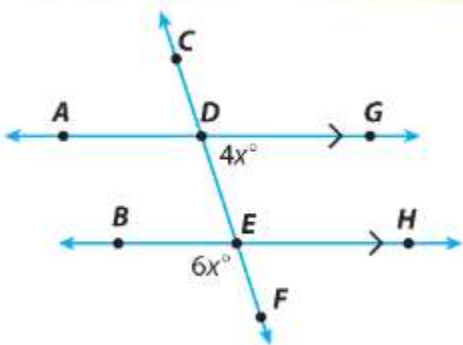


1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_

**Example:** In the diagram below find the value of  $x$  and fill in the value of each unknown angle.



**Example:** In the diagram below find the value of  $x$  as well as the value of the given angles.



$m\angle GDE =$  \_\_\_\_\_

$m\angle BEF =$  \_\_\_\_\_

$m\angle CDG =$  \_\_\_\_\_

**Example:**

Name all pairs of corresponding angles.

\_\_\_\_\_

Name both pairs of alternate exterior angles.

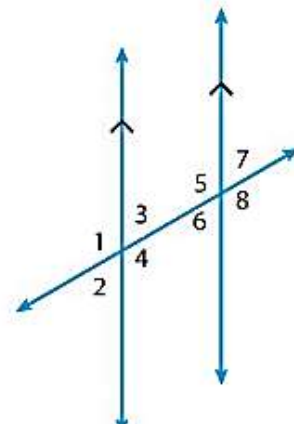
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Name the relationship between  $\angle 3$  and  $\angle 6$ .

\_\_\_\_\_

Name the relationship between  $\angle 4$  and  $\angle 6$ .

\_\_\_\_\_



**Example:**

The Cross Country Bike Trail follows a straight line where it crosses 350th and 360th Streets. The two streets are parallel to each other. What is the measure of the larger angle formed at the intersection of the bike trail and 360th Street? Explain.

