## **Geometry Info Sheet #11**

**Transversals, Lines, and Related Angles** 

## **Definitions**

**Transversal**: A line, ray, or segment that intersects two or more coplanar lines, rays, or segments, each at a different point



The following definitions refer to the above diagram, in which transversal  $\overline{T}$  intersects lines  $\overline{R}$  and  $\overline{S}$ . Note that these definitions do <u>not</u> require that the two lines be parallel to each other.

Alternate Exterior Angles:	∡1 and ∡8	∡2 and ∡7		
Alternate Interior Angles:	∡3 and ∡6	<b>≰</b> 4 and <b>≰</b> 5		
Same-Side Interior Angles:	∡3 and ∡5	<b>∡</b> 4 and <b>∡</b> 6		
Corresponding Angles:	≰1 and ≰5	<b>≰</b> 2 and <b>≰</b> 6	∡3 and ∡7	∡4 and ∡8

Note that the *Big Ideas* textbook refers to same-side interior angles as <u>consecutive interior angles</u>.

## **Postulates and Theorems**

Corresponding Angles Postulate:	If a transversal intersects two parallel lines, then <u>corresponding</u> angles are <u>congruent</u> .
Alternate Exterior Angles Theorem:	If a transversal intersects two parallel lines, then <u>alternate exterior</u> angles are <u>congruent</u> .
Alternate Interior Angles Theorem:	If a transversal intersects two parallel lines, then <u>alternate interior</u> angles are <u>congruent</u> .
Same-Side Interior Angles Theorem:	If a transversal intersects two parallel lines, then <u>same-side interior</u> angles are <u>supplementary</u> .