## 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 $\overleftrightarrow{T}$ intersects lines $\overleftrightarrow{R}$ and $\overleftrightarrow{S}$. Note that these definitions do not require that the two lines be parallel to each other.

Alternate Exterior Angles: $\Varangle 1$ and $\Varangle 8 \quad \Varangle 2$ and $\Varangle 7$
Alternate Interior Angles: $\Varangle 3$ and $\Varangle 6 \quad \Varangle 4$ and $\Varangle 5$
Same-Side Interior Angles: $\Varangle 3$ and $\Varangle 5 \quad \Varangle 4$ and $\Varangle 6$
Corresponding Angles: $\quad 41$ and $\Varangle 5 \quad \Varangle 2$ and $\Varangle 6 \quad \Varangle 3$ and $\Varangle 7 \quad \Varangle 4$ and $\Varangle 8$

Note that the Big Ideas textbook refers to same-side interior angles as consecutive interior angles.

## Postulates and Theorems

Corresponding Angles Postulate: If a transversal intersects two parallel lines, then corresponding angles are congruent.

Alternate Exterior Angles Theorem: If a transversal intersects two parallel lines, then alternate exterior angles are congruent.

Alternate Interior Angles Theorem: If a transversal intersects two parallel lines, then alternate interior angles are congruent.

Same-Side Interior Angles Theorem: If a transversal intersects two parallel lines, then same-side interior angles are supplementary.

