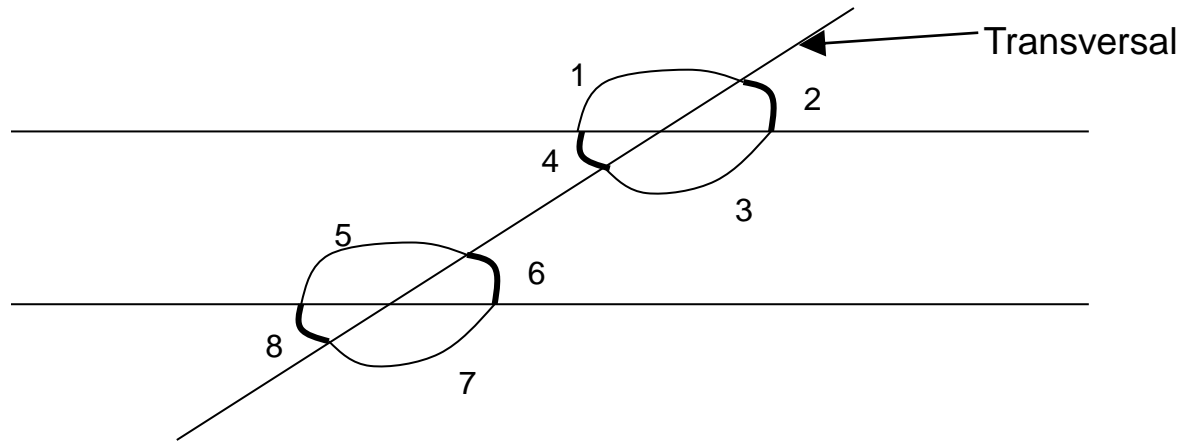
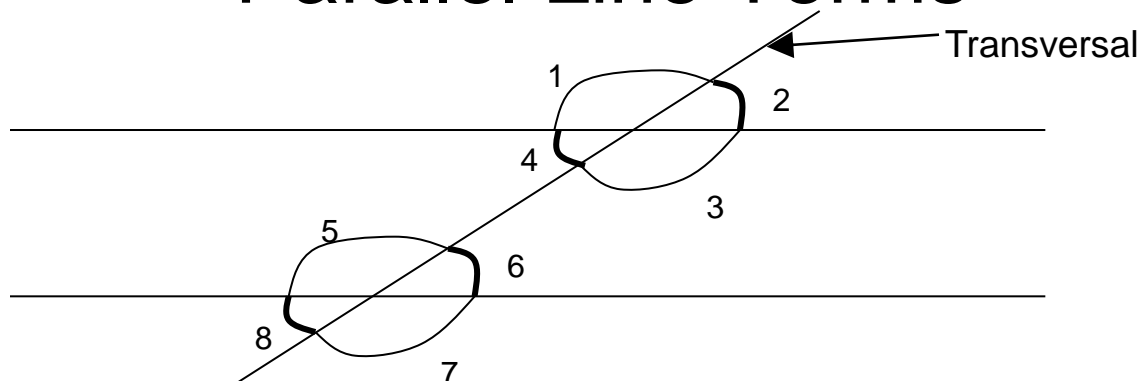


Parallel Line Properties



- Given: two parallel lines cut by a transversal
 - 8 angles are created, but there are only two different angle measures
 - If you know one angle, you know them all
- For example, in the diagram above $m \angle 1 = m \angle 3$ (vertical angles) and $m \angle 1 + m \angle 4 = 180^\circ$ (supplementary angles)
- Example: if $m \angle 1 = 115^\circ$, then $m \angle 3 = m \angle 5 = m \angle 7 = 115^\circ$, and $m \angle 2 = m \angle 4 = m \angle 6 = m \angle 8 = 65^\circ$

Parallel Line Terms



- Corresponding angles (the angles in each pair are equal)
 - On same side of transversal, but one angle is interior, one exterior
 - For example: $\angle 1$ and $\angle 5$; $\angle 4$ and $\angle 8$; $\angle 6$ and $\angle 2$; $\angle 3$ and $\angle 7$
- Alternate interior angles (the angles in each pair are equal)
 - On opposite sides of the transversal, both interior angles
 - For example: $\angle 3$ and $\angle 5$; $\angle 4$ and $\angle 6$
- Alternate exterior angles (the angles in each pair are equal)
 - On opposite sides of the transversal, both exterior angles
 - For example: $\angle 2$ and $\angle 8$; $\angle 1$ and $\angle 7$
- Same side interior angles (the angles in each pair are supplementary)
 - On same side of the transversal, both interior angles
 - For example: $\angle 4$ and $\angle 5$; $\angle 3$ and $\angle 6$
- Same side exterior angles (the angles in each pair are supplementary)
 - On same side of the transversal, both exterior angles
 - For example: $\angle 1$ and $\angle 8$; $\angle 2$ and $\angle 7$