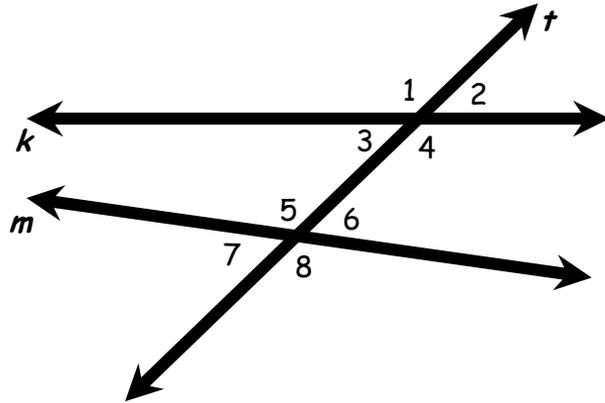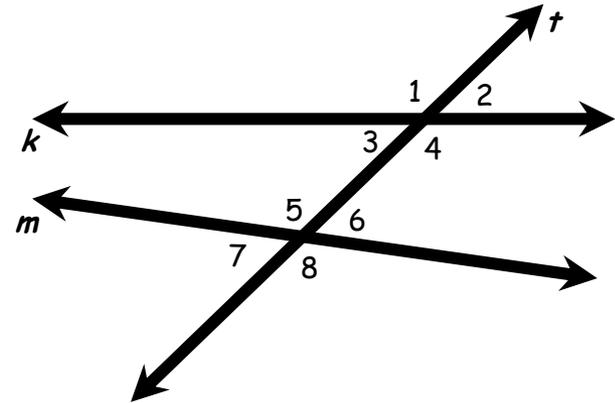# 3.2

PROPERTIES OF PARALLEL LINES

- **Learn and apply the postulates and theorems surrounding special pairs of angles formed by parallel lines and a transversal**
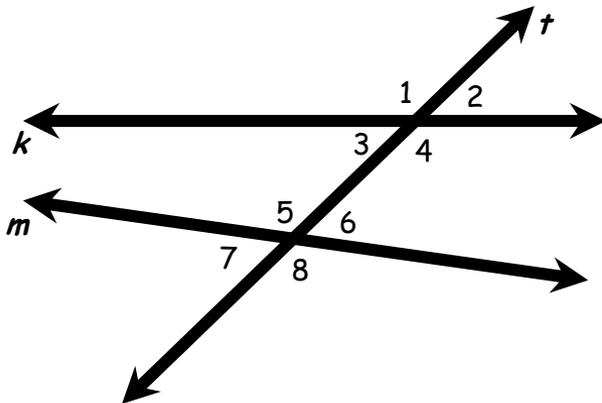
Review

Corresponding Angles
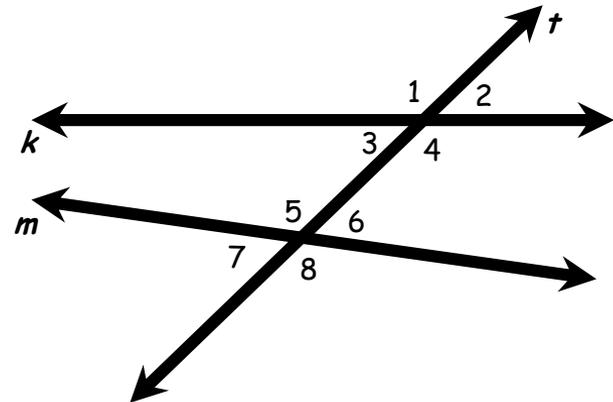

Alternate Interior Angles

Alternate Exterior Angles

Same Side Interior Angles

Exploring...

Corresponding Angles _____ (CA)

POK

If two parallel lines are cut by a transversal, then the corresponding angles are _____

Alternate Interior Angles _____ (AIA)

POK

If two parallel lines are cut by a transversal, then the alternate interior angles are _____

Proof of the Alternate Interior Angle Theorem

Given: $a \parallel b$

Prove: $\angle 3 \cong \angle 6$

Statements	Reasons

Corresponding Angles _____(CA) POK

If two parallel lines are cut by a transversal, then the corresponding angles are _____

Alternate Interior Angles _____(AIA) POK

If two parallel lines are cut by a transversal, then the alternate interior angles are _____

Alternate Interior Angles _____(AEA) POK

If two parallel lines are cut by a transversal, then the alternate exterior angles are _____

Same Side Interior _____ (SSI)

POK

If two parallel lines are cut by a transversal, then the same side interior angles are

_____

Given: $a \parallel b$

Prove: $\angle 4$ & $\angle 6$ are supplementary

Statements	Reasons