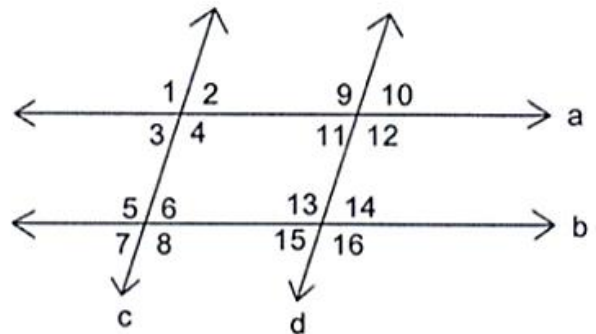


What can we use to Prove?		
Definition of Vertical Angles	Linear Pair Postulate	Definition of Midpoint
Definition of Supplementary Angles	Corresponding Angle Postulate	Definition of Bisect
Definition of Parallel Lines	Alternate Exterior Angle Theorem	Substitution Property
Definition of Perpendicular Lines	Alternate Interior Angle Theorem	Angle Addition Postulate
Reflexive Property ($AB = AB$)	Transitive Property ($a = b, b = c, \text{ then } a = c$)	Segment Addition Postulate

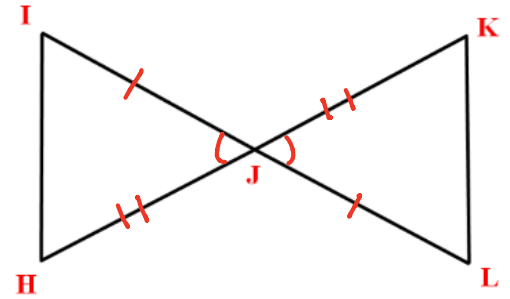
Example 1: Given: $a \parallel b$ and $c \parallel d$
 Prove: $\angle 1 \cong \angle 13$

Statements	Reasons
1. $a \parallel b + c \parallel d$	1. Given
2. $\angle 1 \cong \angle 5$	2. Corresponding \angle 's
3. $\angle 5 \cong \angle 13$	3. Corresponding \angle 's
4. $\angle 1 \cong \angle 13$	4. Transitive Prop.



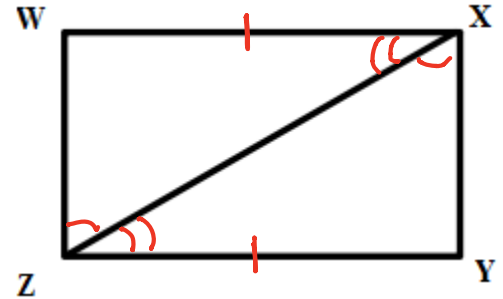
Triangle Congruence		
Name:	Picture	Definition
Angle-Side-Angle (ASA)		two triangles that have two pairs of angles congruent and the side between them congruent
Side-Angle-Side (SAS)		two triangles that have two corresponding sides that are congruent and the angle between them congruent
Side-Side-Side (SSS)		two triangles that have three corresponding sides that are congruent
Angle-Angle-Side (AAS)		two triangles that have two pairs of angles congruent and the side not between them congruent
Hypotenuse-Leg (HL)		two right triangles that have hypotenuses and a pair of congruent legs

Example 2: Given: J is the midpoint of IL.
 J is the midpoint of HK.
 Prove: $\triangle IJH \cong \triangle LJK$



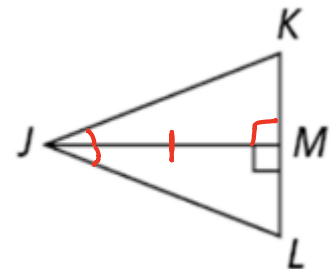
Statement:	Reason:
J is the midpoint of IL J is the midpoint of HK	Given
$IJ \cong JL$	Defn. of midpoint
$HJ \cong JK$	Defn. of midpoint
$\angle IJH \cong \angle LJK$	vertical \angle 's
$\triangle IJH \cong \triangle LJK$	SAS

You Try! Given: $WX \parallel YZ$, $WX \cong YZ$
 Prove: $\triangle WXZ \cong \triangle YZX$
 (Hint: It should take anywhere from 4-5 steps)



Statement:	Reason:
$WX \parallel YZ$ $WX \cong YZ$	Given
$\angle WXZ \cong \angle YZX$	Alternate Interior \angle 's
$\angle XZW \cong \angle YXZ$	Alternate Interior \angle 's
$\triangle WXZ \cong \triangle YZX$	AAS

You Try! Given: \overline{JM} bisects $\angle J$.
 $\overline{JM} \perp \overline{KL}$
 Prove: $\triangle JMK \cong \triangle JML$



Statement:	Reason:
\overline{JM} bisects $\angle J$	Given
$\overline{JM} \perp \overline{KL}$	Given
$\angle JMK + \angle JML$ are 90°	Defn. of \perp Lines
$\angle JMK \cong \angle JML$	Defn. of right \angle 's
$\angle KJM \cong \angle MJL$	Defn. of Bisector
$JM \cong JM$	Reflexive Prop.
$\triangle JMK \cong \triangle JML$	ASA