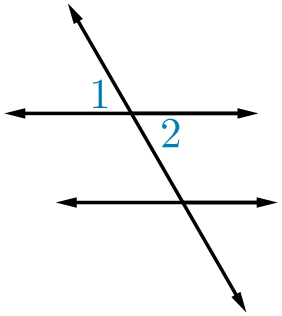
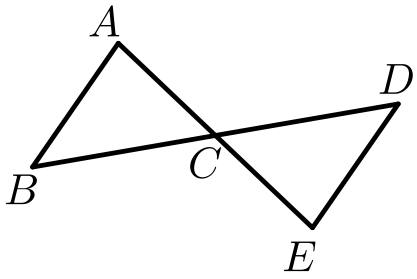
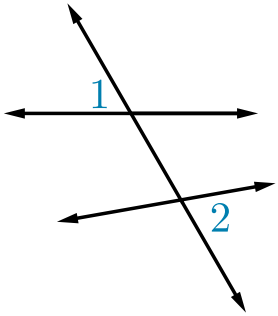
Vertical Angles Congruence Theorem

Examples & Non-Examples

Example	Example	Non-Example
		
We know angle 1 is congruent to angle 2 because of the Vertical Angles Congruence Theorem.	*We know angle ACB is congruent to angle ECD because of the Vertical Angles Congruence*	*Angle 1 and angle 2 are not vertical angles, so we do not know if they are congruent.*

Definition

The **Vertical Angles Congruence Theorem** states that:

> "**If two angles are vertical angles, then they are congruent.**"

In simple terms:

When two lines intersect, they form two pairs of opposite (vertical) angles. This theorem tells us that each pair of vertical angles will always be equal in measure.

In symbols:

If $\angle 1$ and $\angle 2$ are vertical angles,
then $\angle 1 \cong \angle 2$

Example:

If two lines cross and create angles labeled $\angle A$ and $\angle B$ opposite each other, then $\angle A \cong \angle B$

This theorem is often used in geometry proofs involving intersecting lines.