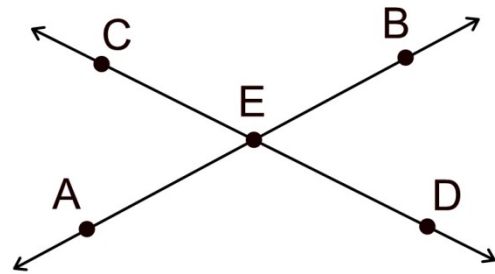# Vertical Angles and Rotations

Name_____

PROVE: Vertical angles are congruent.

Given: straight lines $\overleftrightarrow{AB}$, $\overleftrightarrow{CD}$

Prove: $\angle AEC \cong \angle BED$
and/or $\angle CEB \cong \angle DEA$

Transformational Proof:

> The basis of this transformational proof will be a rotation of 180º about *E*.

1. A rotation of 180º about *E*, will map *A* onto _____.

2. A rotation of 180º about *E*, will map *C* onto _____.

3. Explain why $\angle A'EC' \cong \angle BED$.

4. Explain why $\angle A'EC' \cong \angle AEC$.

5. Explain why $\angle AEC \cong \angle BED$.

6. Done! (A similar process will prove $\angle CEB \cong \angle DEA$.)