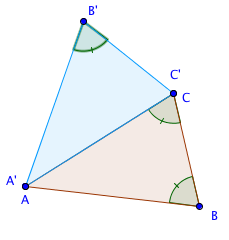
**Activity 2.3.4a Proving the Isosceles Triangle Converse**

**Fill in the blanks in this proof.**

Given ∆*ABC* with *mABC= mACB*

Prove *AB* = *AC*

*Step 1*. Reflect ∆*ABC* over line *AC*.

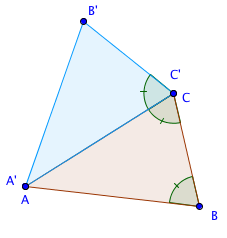
**

*Step 2*. In ∆*ABC* and ∆*ACB*’

*mABC= mAB’C* Why? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*mABC= mACB* Why? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Therefore *mACB = mAB’C* Why? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

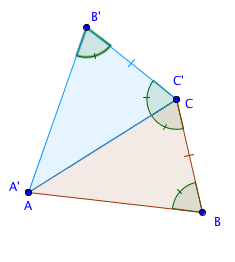


*Step 3*. Show that *mABC = mACB’*

*m\_\_\_\_\_= m\_\_\_\_\_\_* Why? \_\_\_\_\_\_\_\_\_\_\_\_

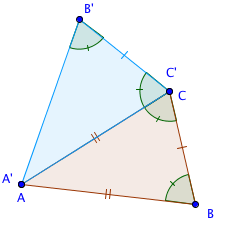
*m\_\_\_\_\_= m\_\_\_\_\_\_* Why? \_\_\_\_\_\_\_\_\_\_\_\_

Therefore, *mABC = mACB’* Why? \_\_\_\_\_\_\_\_\_\_\_\_



*Step 4. BC* = *B’C* Why? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*Step 5.* From Steps 2, 3, and 4 we can prove that ∆*ABC* and ∆*ACB’* are congruent, by the \_\_\_\_\_\_\_ Congruence Theorem.

**

*Step 6. AB = AC* since corresponding parts of congruent triangles are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.