How to bisect an angle

Let angle $BAC$ be the angle to bisect.
Pick a point on $AB$ called $D$.
Pick the point $E$ on $AC$ such that $AD = AE$ (prop I.3).
Draw line $DE$.
Construct equilateral triangle $DEF$ (prop I.1).
Draw line $AF$.

Claim: angle $BAC$ is bisected by $AF$.
We know that $AD = AE$.
$AF$ is common to both triangles $ADF$ and $AEF$.
Since triangle $DEF$ is equilateral, $DF = EF$. 
Therefore triangle $ADF$ is congruent to $AEF$ by SSS (prop I.8)
Thus angle $BAF$ is equal to angle $CAF$
Therefore $AF$ bisects angle $BAC$

**Comments:** Point $D$ can be picked at random on line $AB$, however point $E$ must be selected such that $AD = AE$, which we are able to do because of prop I.3

The previously proved prop I.8, or side side side, is necessary here because it is used in order to prove that the supposedly bisected angle is made up of two equal angles