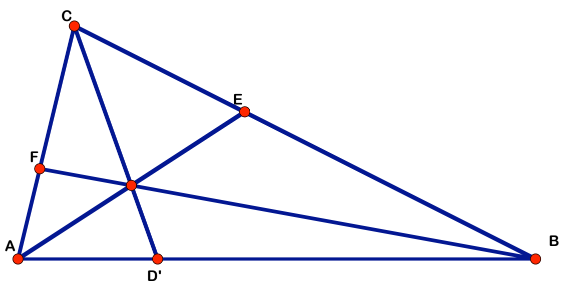
Theorem 54. (Converse of Ceva's Theorem) In a triangle ABC, points D,E and F on the sides AB,BC and AC. If $\frac{|AD|}{|DB|}\cdot\frac{|BE|}{|EC|}\cdot\frac{|CF|}{|FA|}=1$, then lines CD,BF and AE are concurrent.

Proof: Assume lines BF and AE intersect at the point O. Draw a line CO. Assume it intersect the line AB at the point D'.



1. $\frac{|AD'|}{|D'B|}\cdot\frac{|BE|}{|EC|}\cdot\frac{|CF|}{|FA|}=1$ — 1. Follows from Ceva's Theorem.
2. $\frac{|AD|}{|DB|}\cdot\frac{|BE|}{|EC|}\cdot\frac{|CF|}{|FA|}=1$ — 2. Given.
3. $\frac{|AD'|}{|D'B|}=\frac{|AD|}{|DB|}$ — 3. Follows from 1. and 2.
4. D=D'. — 4. If two points divide segment AB in the same ratio they coinside.