

Mathematics 2260H – Geometry I: Euclidean geometry
TRENT UNIVERSITY, Winter 2013

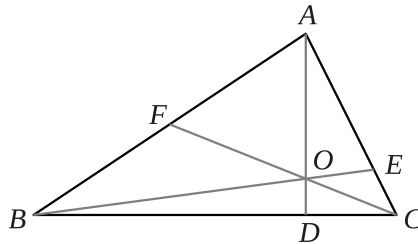
Assignment #10

Ceva's Theorem returns!

Due on Monday, 1 April, 2013.

In Assignment #7 you were asked to prove one direction of a limited version of Ceva's Theorem. Using the same conventions about the orientation of line segments as in Menelaus' Theorem, the full version of Ceva's Theorem is:

CEVA'S THEOREM. Suppose D , E , and F are points on (extensions of) the sides BC , AC , and AB , respectively, of $\triangle ABC$. Then AD , BE , and CF all meet in a single point O if and only if $\frac{AF}{FB} \cdot \frac{BD}{DC} \cdot \frac{CE}{EA} = 1$.



1. Prove Ceva's Theorem. [10]

Hint: You may assume what was to be shown in Assignment #7. There are also ways to prove Ceva's Theorem using Menelaus' Theorem.