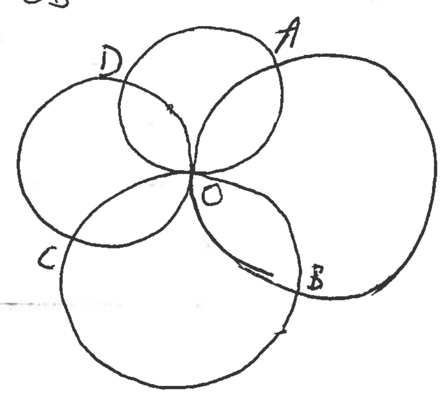
Geometry [Hard] 2005 Winter Camp

Four circles C_1, C_2, C_3, and C_4 are concurrent at a point O, with pairs C_1, C_3 and C_2, C_4 externally tangent at O. The circles intersect again at A, B, C, D as shown. Show that $AB \cdot OD \cdot OC = CD \cdot OA \cdot OB$



Geometry [medium] BMO 2001

A triangle ABC has $\angle ACB > \angle ABC$. The internal bisector of $\angle BAC$ meets BC at D. The point E on AB is such that $\angle EDB = 90°$. The point F on AC is such that $\angle BED = \angle DEF$. Show that $\angle BED = \angle FDC$.

Two circles C_1 and C_2 intersect at a point A.
A chord BC of C_1 is parallel to the tangent of C_2 at A.
AB and AC intersect C_2 at D and E. Prove that
$BCED$ is cyclic.