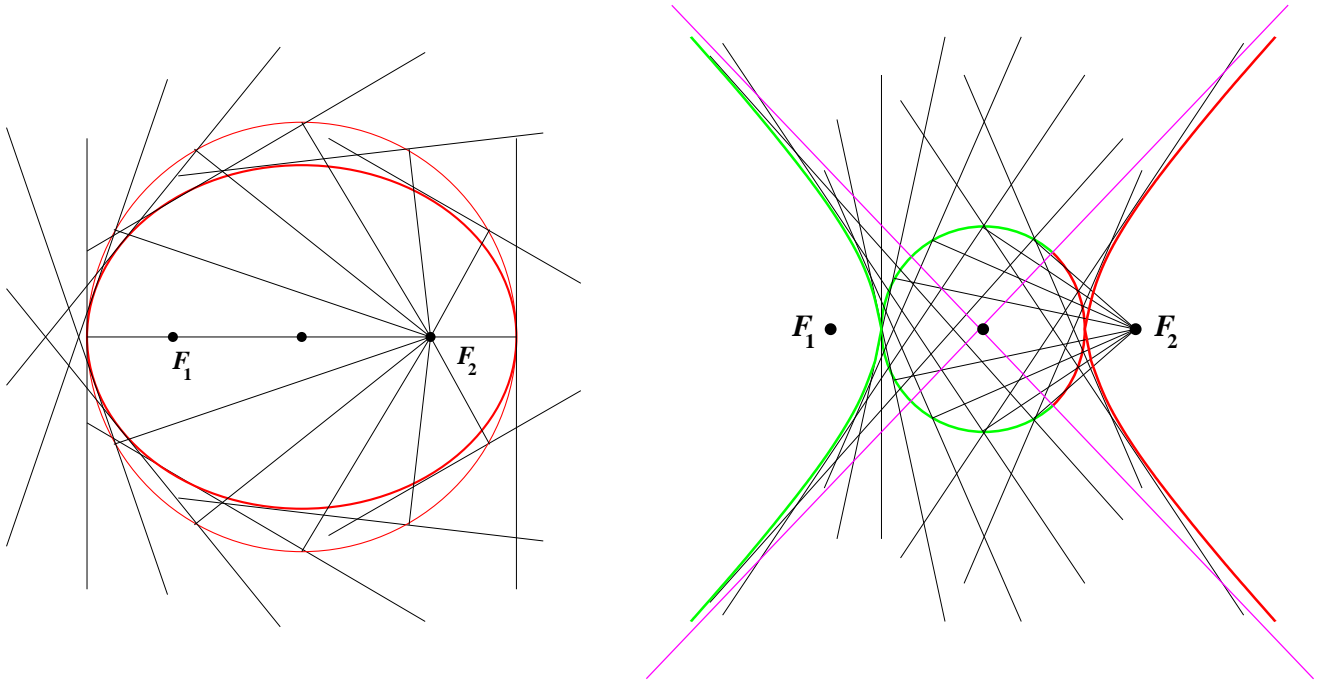


# Calculus Problem Of the Week

May 01 — 07, 2006

## Pedal conics

**Definition.** Given a curve  $\Gamma$  and a point  $p$ , the *pedal curve*  $\Gamma_p$  of  $\Gamma$  with respect to  $p$  is a curve formed by the bases of perpendiculars from  $p$  onto all tangent lines of  $\Gamma$ .



1. Prove that the pedal curve of an ellipse with respect to one of its foci is a circle.
2. Prove that the pedal curve of a hyperbola with respect to one of its foci is a circle.
3. Find the pedal curve of a parabola with respect to its focus.