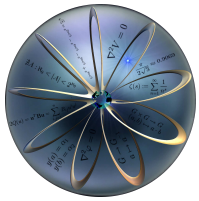

planetmath.org

Math for the people, by the people.

confocal

Canonical name	Confocal
Date of creation	2013-03-22 14:44:58
Last modified on	2013-03-22 14:44:58
Owner	Mathprof (13753)
Last modified by	Mathprof (13753)
Numerical id	6
Author	Mathprof (13753)
Entry type	Definition
Classification	msc 51N20

Two conics are *confocal* if they have coincident foci.

Examples

1. The family of ellipses

$$\frac{x^2}{a^2+s}+\frac{y^2}{b^2+s}=1,$$

   where $a^2>b^2$ and the parameter s is $>-b^2$, is confocal.

2. The family of hyperbolas

$$\frac{x^2}{a^2-t}-\frac{y^2}{t-b^2}=1,$$

   where $a^2>b^2$ and the parameter t is between a^2 and b^2, is confocal.