

Re: Determining an ellipse

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- *From:* Philippe 92 <nospam@xxxxxxxxxxxxxx>
 - *Date:* Wed, 13 Apr 2005 21:00:16 +0200
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Hop David wrote :

A N Niel wrote:

In article <425D5319.8050201@xxxxxxxxxxxxxxxxxxxxxxxxxxxx>, Hop David <hopspageHATESSPAaMmM@xxxxxxxxxxxxxxxxxxxxxxxxxxxx> wrote:

Given:

A focus lies on the origin
The semimajor axis a
The eccentricity e
and two points on the ellipse's circumference.

With this info how is the ellipse's equation determined?

(I also posted this question in geometry.puzzles)

Thanks in advance,

Focus at the origin, eccentricity given. Try polar coordinates.

OK.

$r = p / (1 + e \cdot \cos(f))$ where p is semilatus rectum.

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don't know that term... however $p = a(1-e^2)$ is a known value,
"given the semimajor axis a and excentricity e "

To rotate ellipse axis k radians from x axis I believe the equation becomes

$$r=p/(1+e*\cos(f+k))?$$

Yes. So there is only one unknown : k , ellipse rotation.

and points on circumference $(a1,a2)$ and $(b1,b2)$
become $(\sqrt{a1^2 + a2^2}, \text{atan}(a1/a2))$ and
 $(\sqrt{b1^2 + b2^2}, \text{atan}(b1/b2))$?

Hence there is no chance to fit both points.

Where to go from there isn't immediately obvious to me.

Your problem is over specified : you must discard one of your constraints.

Regards.

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mail : chephip+misc at free dot fr
replace misc by news otherwise message will go to trash

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