Re: Complex numbers (for geometry proof)

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* *Date*: 16 Nov 2007 21:35:45 GMT

On Fri, 16 Nov 2007 21:32:39 +0100, Denis Feldmann wrote:

> Fons a écrit :
>
> > What would be a short and straightforward way to prove that
> >
> > |z−z_1| / |z−z_2| = a
> >
> > (in which z_1 and z_2 are complex and a is real and independent of z) implies the existence of a complex number z_0 and a real number R (also independent of z) so that
> >
> > |z−z_0| = R
> >
> > maybe without having to calculate z_0 and R?
>
> Short and straightforward? i dont know. I would either write some equations (and note that the resuting relation between real and imaginary parts of z is that of a circkle), or use the geometrical interpretation, getting what is known as "Leibniz problem"

Well, I can find the two points that are on the line connecting z_1 and z_2 and those would form the diameter of the circle, allowing me to calculate z_0 and R. But I was wondering if there was a nice and simple way, perhaps doing only some operations on the complex numbers/ expressions themselves (e.g without explicitly going to the reals by putting z=x+iy), to prove that the locus is "some" circle.

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