

Re: Help with analysis of complex function

Source: <http://sci.tech-archive.net/Archive/sci.math/2004-11/4026.html>

From: Diana (diana53_at_earthlink.net)

Date: 11/19/04

Date: 19 Nov 2004 08:56:34 -0800

Thanks Wade, I understand...

The World Wide Wade <waderameyxiii@comcast.remove13.net> wrote in message news:<waderameyxiii-731982.11094918112004@news.supernews.com>...

> In article <[t53nd.2105\\$Tq6.946@newsread3.news.pas.earthlink.net](mailto:t53nd.2105$Tq6.946@newsread3.news.pas.earthlink.net)>,

> "Diana" <diana53xiii@earthlink.remove13.net> wrote:

>

> > I am trying to show that the magnitude of the following function achieves

> > its maximum at $z = R + Pi I$.

> >

> > $E^{(3z)/(1 + E^z)}$ where z ranges from $z = R (>0)$ to $z = R + 2 Pi I$.

>

> $|e^{(3z)/(1 + e^z)}| = |e^{(3z)}|/|1 + e^z| = e^{(3R)}/|1 + e^z|$. You maximize

> the last expression by minimizing the denominator. But $1 + e^{(R+it)}$

> describes a circle of radius e^R , centered at 1, as t goes from 0 to $2Pi$.

> Where does that circle have minimum modulus?