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Subject: Re: ProductLog function  
Posted by [pgrigis](#) on Thu, 01 May 2008 13:26:39 GMT  
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You could try to use a numerical solver like `fx_root` in IDL.

Ciao,  
Paolo

emitch...@gmail.com wrote:

> Hi all, I've used Wolfram Mathematica to solve an equation for x, and  
> have been given a solution involving the function ProductLog. I was  
> wondering if anyone knew if there was any inbuilt capacity in IDL to  
> evaluate this. It's definitely different to `PRODUCT(ALOG(x))`, as I've  
> tried this but results were wrong.  
>  
> I'm trying to convert a matrix of y's to x's, but the equation I need  
> to use is:  
>  
>  $y = 0.0015x + a(1 - \exp(-bx))$   
>  
> Mathematica gave me (to 6sf):  
>  
>  $0.333333(-2000.a + 2000.y +$   
>  $(3.\text{ProductLog}(666.667(a.b.\exp(666.667b(1.a-1.y)))))/b$   
>  
> I tried this in IDL, but no joy:  
>  
>  $(1D/3D)*(-2000D*a + 2000D*y + (3*(\text{PRODUCT}(\text{ALOG}((2000D/$   
>  $3D)*a*b*\exp((2000D/3D)*b*((a-1D)*(y))))))/b)$   
>  
> Cheers,  
>  
> Ed

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