Subject: Re: value of a function at y(0) given the definite integral
Posted by aqueous0123 on Fri, 26 Oct 2001 19:55:49 GMT
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Anybody out there?

aqueous0123@yahoo.com (aqueous) wrote in message
news:<eecb3de2.0110221241.46cb7d16@posting.google.com>...
> Say I know the shape of a function y(x). Say it's x^2.
> Say I know the integral from a to b of this function. Say it's 1.0.
>
> What I want to do is find out the value of the function at y(0) given
> the info above, mainly
>
> y(x) = x^2
> integral_ab(y(x)) = 1.0
> What's the value of y(lowerLimit)?
>
>
> Does anybody know how to solve for this?
>
> I was going along the lines of:
>
> 1) find indefinate integral of y(x), call this Y
> 2) so... Y(b) - Y(a) = 1.0. Correct? Then I just solve for Y at lower
> limit.
> 3) Y(a) = Y(b) - 1.0. => Y(a) is my answer, I think, or do I have to
> differentiate this?
>
> So if I can find the indefinate integral of y(x) and then just use
> algebra to solve by that rule Y(upperLimit) - Y(lowerLimit) =
> definiteIntegral. Am I right?
>
> In my above example of y(x) = x^2, say the limits [a,b] are [0,3]. To
> find what's going on at x=0, I'd have:
>
> integral(x^2) = Y = x^3/3 ;the indefinite integral of x^2
> Y(3) - Y(0) = 1.0
> 3^3/3 - Y(0) = 1.0
> 9 - Y(0) = 1.0
> Y(0) = 8
> ;what to do now?? I thought I'd just plug in my lower limit (here 0)
> for x in x^3/3 = 8, but then eqn is in form const=const!
> 0^3/3 = 8
> 1/3 = 8
>
> Ok, now I've gone astray. I must be missing something.
>

> My problems are
> 1) I'm not sure if I'm approaching this the correct way and
> 2) How do I get the indefinite integral in IDL. QSimp(), etc. find
> only definite integrals. I think I need the indefinite integ. so I can
> find my value at y(lowerLimit). Or, is my entire approach wrong?
>
> Does this make sense??
>
> THanks