

Re: " $f^{[n]}(x) = \exp(n/\phi'(x) D) \circ x$ "

Re: " $f^{[n]}(x) = \exp(n/\phi'(x) D) \circ x$ "

Source: <http://sci.tech-archive.net/Archive/sci.math/2006-05/msg00864.html>

- From: "G. A. Edgar" <edgar@xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx>
 - Date: Thu, 04 May 2006 15:51:39 -0400
-

In article <1146765273.121843.263350@xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx>, <"alainverghote@xxxxxxx"> wrote:

Dear Edgar ,

an other writing seems to be :
 $\sum_{k=0}^{\infty} \frac{1}{k!} * \{ n / \phi'(x) * d/dx \}^k \circ x$.

What is that x on the end. A function? A variable?
If it is a variable, how do you compose with it?
Should the ending be " ... $^k(x)$ " and not " ... $^k \circ x$ " ??

I've tried the formula
 $\exp(n/\phi'(x) D) \circ x$ with a very simple
case $f(x) = a*x + b$, $\phi(x) = \ln(x + b/(a-1)) / \ln(a)$
 $1 / \phi'(x) = (x + b/(a - 1)) * \ln(a)$.

I believe you 're right saying :
" a feeling it is a version
of the formula $\exp(aD)(g)(x) = g(x+a)$ which is a symbolic
way of writing the Taylor series. "

Amitiés , Alain

—
G. A. Edgar <http://www.math.ohio-state.edu/~edgar/>