1 Introduction

$CrInGeCrInGeProduction.Supercringeintroductionhere:$

2 Some basic knowledge about researching problem...

Let's calculate smth with a given function: f(me) = $\ln(1.000 + me)$

Firstly, let's simplify this expression (if possible): f(me) = $\ln(1.000 + me)$

3 Exploration of the expression

Calculation value of function in the point BRITISH SCIENTISTS WERE SHOCKED, WHEN THEY COUNT IT!!!

In the point $M_0(me_0) = (1.000)$ **it's value** $= 0.69315$

Personally, I've always thought about first derivation of something like that function... Haven't you?

But now, by using informatics and math skills I feel that I'm prepared enough to calculate it!

`1 step:` Finding a derivation of me

While preparing for exams, I learned a lot of new things, for example:

$(me)' = ... =$ [top secret] $= ... =$

$= 1.000$

`2 step:` Finding a derivation of 1.000

It's really easy to find:

$(1.000)' = ... =$ [top secret] $= ... =$

$= 0.000$

`3 step:` Finding a derivation of $1.000 + me$

My roommate mumbled it in his sleep all night:

$(1.000 + me)' = ... =$ [top secret] $= ... =$

$= 1.000$

`4 step:` Finding a derivation of $\ln(1.000 + me)$

Sounds logical that it is the same as:

$(\ln(1.000 + me))' = ... =$ [top secret] $= ... =$

$= \frac{1.000}{1.000+me}$

Congratulations! **The first derivation of the expression** is:

$f'(me) = \frac{1.000}{1.000+me}$

In the point $M_0(me_0) = (1.000)$ it's value $= 0.50000$

Finding the 3 derivation Let's find **the 1 derivation** of the expression:

`1 step:` Finding a derivation of me

For centuries, people have hunted for the secret knowledge that:

$(me)' = ... =$ [top secret] $= ... =$

$= 1.000$

`2 step:` Finding a derivation of 1.000

Sounds logical that it is the same as:

$(1.000)' = ... =$ [top secret] $= ... =$

$= 0.000$

`3 step:` Finding a derivation of $1.000 + me$

It's really easy to find:

$(1.000 + me)' = ... =$ [top secret] $= ... =$

$= 1.000$

`4 step:` Finding a derivation of $\ln(1.000 + me)$

My roommate mumbled it in his sleep all night:

$(\ln(1.000 + me))' = ... =$ [top secret] $= ... =$

$= \frac{1.000}{1.000+me}$

Let's find **the 2 derivation** of the expression:

`1 step:` Finding a derivation of me

What if:

$(me)' = ... =$ [top secret] $= ... =$

$= 1.000$

`2 step:` Finding a derivation of 1.000

It's really easy to find:

$(1.000)' = ... =$ [top secret] $= ... =$

$= 0.000$

`3 step:` Finding a derivation of $1.000 + me$

Even my two-aged sister knows that:

$(1.000 + me)' = ... =$ [top secret] $= ... =$

$= 1.000$

`4 step:` Finding a derivation of 1.000

When I was child, my father always told me: "Remember, son:

$(1.000)' = ... =$ [top secret] $= ... =$

$= 0.000$

`5 step:` Finding a derivation of $\frac{1.000}{1.000+me}$

I spend the hole of my life to find the answer and finally it's:

$(\frac{1.000}{1.000+me})' = ... =$ [top secret] $= ... =$

$= \frac{(-1.000)\cdot 1.000}{(1.000+me)^{2.000}}$

Let's find **the 3 derivation** of the expression:

`1 step:` Finding a derivation of me

Man... Just look:

$(me)' = ... =$ [top secret] $= ... =$

$= 1.000$

`2 step:` Finding a derivation of 1.000

For centuries, people have hunted for the secret knowledge that:

$(1.000)' = ... =$ [top secret] $= ... =$

$= 0.000$

`3 step:` Finding a derivation of $1.000 + me$

It's really easy to find:

$(1.000 + me)' = ... =$ [top secret] $= ... =$

$= 1.000$

`4 step:` Finding a derivation of $(1.000 + me)^{2.000}$

It's simple as fuck:

$((1.000 + me)^{2.000})' = ... =$ [top secret] $= ... =$

$= 2.000 \cdot (1.000 + me)$

`5 step:` Finding a derivation of -1.000

thanks to the results of my colleagues' scientific work, I know that:

$(-1.000)' = ... =$ [top secret] $= ... =$
$= 0.000$

`6 step:` Finding a derivation of $\frac{(-1.000)}{(1.000+me)^{2.000}}$

When I was child, my father always told me: "Remember, son:
$(\frac{(-1.000)}{(1.000+me)^{2.000}})' = ... =$ [top secret] $= ... =$
$= \frac{(-1.000)\cdot(-1.000)\cdot 2.000\cdot(1.000+me)}{((1.000+me)^{2.000})^{2.000}}$

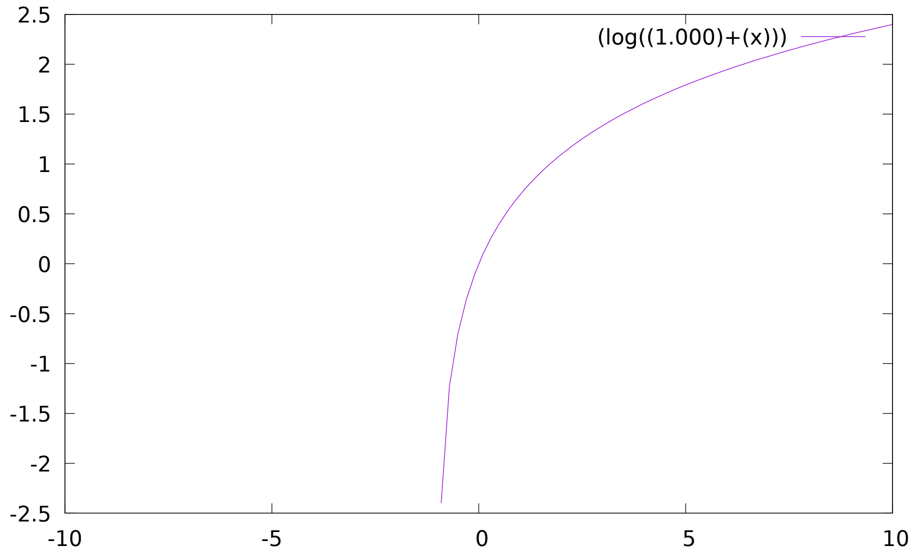
Finally... The 3 derivation of the expression:
$f^{(3)}(\mathrm{me}) = \frac{(-1.000)\cdot(-1.000)\cdot 2.000\cdot(1.000+me)}{((1.000+me)^{2.000})^{2.000}}$
BRITISH SCIENTISTS WERE SHOCKED AGAIN, WHEN THEY COUNT THE 3 DERIVATION OF THIS EXPRESSION!!!
In the point $M_0(me_0) = (1.000)$ it's value $= 0.25000$

Finding partical derivations Partial derivation of the expression on the variable me:
$\frac{\partial f}{\partial me} = \frac{1.000}{1.000+me}$
In the point $M_0(me_0) = (1.000)$ it's value $= 0.50000$!!!

Finding full derivation Full derivation:
$\sqrt{(\frac{1.000}{1.000+me})^{2.000}}$
In the point $M_0(me_0) = (1.000)$ it's value $= 0.50000$!!!

Decomposing on Macloren's formula **Maklorens formula for** $me \to me_0 = 1.000$:
$\mathrm{f(me)} = 0.693 + 0.500\cdot(me-1.000) + (-0.125)\cdot(me-1.000)^{2.000} + 0.042\cdot(me-1.000)^{3.000} + (-0.016)\cdot(me-1.000)^{4.000} + 0.006\cdot(me-1.000)^{5.000} + (-$

Graphics **Graph** $\mathrm{f(me)} = \ln(1.000+me)$ on the diapasone $me \in [-10:10]$:



Equations in the point **Tangent equation** in the point $me_0 = 1.000$:
$\mathrm{f(me)} = 0.500\cdot(me-1.000) + 0.693$
Normal equation in the point $me_0 = 1.000$:
$\mathrm{f(me)} = (-2.000)\cdot(me-1.000) + 0.693$
Their graphs in $\delta = 1.00000$ coverage of the point $me_0 = 1.000000$