1 Introduction

$CrInGeCrInGeProduction.Supercringeintroductionhere$:

2 Some basic knowledge about researching problem...

Parameters and constants we use in this work:

Constants (3):

e = 2.718282

pi = 3.141593

AbObA = 1337.228690

Variables (2):

kek = 13.000000

x = 1.000000

Parameters of exploration :

Number of differentiates : 2

Macloren's accuracy : 3

Tanget point : 0.200000

Delta coverage of tangent point: 2.500000

Graph diapasone : $[-1 : 15]$

So let's calculate smth with a given function: f(kek, x) = $\cos kek + \ln(1.000 + x \cdot kek)$

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

3 Exploration of the expression as a function of multiple variables

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

In the point $M_0(kek_0, x_0) = (13.000, 1.000)$ **it's value** = 3.54650

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 kek

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

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

$= 1.000$

`2 step:` Finding a derivation of x

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

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

$= 1.000$

`3 step:` Finding a derivation of $x \cdot kek$

What if:

$(x \cdot kek)' =$ ... = [top secret] = ... =

$= kek + x$

`4 step:` Finding a derivation of 1.000

If someone asked me that in the middle of the night, I wouldn't hesitate to say:

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

$= 0.000$

`5 step:` Finding a derivation of $1.000 + x \cdot kek$

It's really easy to find:

$(1.000 + x \cdot kek)' =$ ... = [top secret] = ... =

$= kek + x$

`6 step:` Finding a derivation of $\ln(1.000 + x \cdot kek)$

My friends always beat me, because I didn't know that:

$(\ln(1.000 + x \cdot kek))' =$ ... = [top secret] = ... =

$= \frac{1.000}{1.000 + x \cdot kek} \cdot (kek + x)$

`7 step:` Finding a derivation of kek

Sounds logical that it is the same as:

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

$= 1.000$

`8 step:` Finding a derivation of $\cos kek$

My roommate mumbled it in his sleep all night:

$(\cos kek)' =$ ... = [top secret] = ... =

$= (-1.000) \cdot \sin kek$

`9 step:` Finding a derivation of $\cos kek + \ln(1.000 + x \cdot kek)$

What if:

$(\cos kek + \ln(1.000 + x \cdot kek))' =$ ... = [top secret] = ... =

$= (-1.000) \cdot \sin kek + \frac{1.000}{1.000 + x \cdot kek} \cdot (kek + x)$

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

$f'(kek, x) = (-1.000) \cdot \sin kek + \frac{1.000}{1.000 + x \cdot kek} \cdot (kek + x)$

In the point $M_0(kek_0, x_0) = (13.000, 1.000)$ it's value = 0.57983

Finding the 2 derivation Let's find **the 1 derivation** of the expression:

`1 step:` Finding a derivation of kek

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

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

$= 1.000$

`2 step:` Finding a derivation of x

Sounds logical that it is the same as:

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

$= 1.000$

`3 step:` Finding a derivation of $x \cdot kek$

I was asked not to tell anyone that:

$(x \cdot kek)' =$ ... = [top secret] = ... =

$= kek + x$

`4 step:` Finding a derivation of 1.000

Even my two-aged sister knows that:

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

$= 0.000$

`5 step:` Finding a derivation of $1.000 + x \cdot kek$

I was asked not to tell anyone that:

$(1.000 + x \cdot kek)' = \ldots = [\text{top secret}] = \ldots =$
$= kek + x$

`6 step:` Finding a derivation of $\ln(1.000 + x \cdot kek)$

If someone asked me that in the middle of the night, I wouldn't hesitate to say:

$(\ln(1.000 + x \cdot kek))' = \ldots = [\text{top secret}] = \ldots =$
$= \frac{1.000}{1.000 + x \cdot kek} \cdot (kek + x)$

`7 step:` Finding a derivation of kek

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

$(kek)' = \ldots = [\text{top secret}] = \ldots =$
$= 1.000$

`8 step:` Finding a derivation of $\cos kek$

My roommate mumbled it in his sleep all night:

$(\cos kek)' = \ldots = [\text{top secret}] = \ldots =$
$= (-1.000) \cdot \sin kek$

`9 step:` Finding a derivation of $\cos kek + \ln(1.000 + x \cdot kek)$

Even my two-aged sister knows that:

$(\cos kek + \ln(1.000 + x \cdot kek))' = \ldots = [\text{top secret}] = \ldots =$
$= (-1.000) \cdot \sin kek + \frac{1.000}{1.000 + x \cdot kek} \cdot (kek + x)$

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

`1 step:` Finding a derivation of x

Man... Just look:

$(x)' = \ldots = [\text{top secret}] = \ldots =$
$= 1.000$

`2 step:` Finding a derivation of kek

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

$(kek)' = \ldots = [\text{top secret}] = \ldots =$
$= 1.000$

`3 step:` Finding a derivation of $kek + x$

I was asked not to tell anyone that:

$(kek + x)' = \ldots = [\text{top secret}] = \ldots =$
$= 2.000$

`4 step:` Finding a derivation of kek

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

$(kek)' = \ldots = [\text{top secret}] = \ldots =$
$= 1.000$

`5 step:` Finding a derivation of x

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

$(x)' = \ldots = [\text{top secret}] = \ldots =$
$= 1.000$

`6 step:` Finding a derivation of $x \cdot kek$

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

$(x \cdot kek)' = \ldots = [\text{top secret}] = \ldots =$
$= kek + x$

`7 step:` Finding a derivation of 1.000

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

$(1.000)' = \ldots = [\text{top secret}] = \ldots =$
$= 0.000$

`8 step:` Finding a derivation of $1.000 + x \cdot kek$

Sounds logical that it is the same as:

$(1.000 + x \cdot kek)' = \ldots = [\text{top secret}] = \ldots =$
$= kek + x$

`9 step:` Finding a derivation of 1.000

A true prince must know that:

$(1.000)' = \ldots = [\text{top secret}] = \ldots =$
$= 0.000$

`10 step:` Finding a derivation of $\frac{1.000}{1.000 + x \cdot kek}$

If someone asked me that in the middle of the night, I wouldn't hesitate to say:

$(\frac{1.000}{1.000 + x \cdot kek})' = \ldots = [\text{top secret}] = \ldots =$
$= \frac{(-1.000) \cdot (kek + x)}{(1.000 + x \cdot kek)^{2.000}}$

`11 step:` Finding a derivation of $\frac{1.000}{1.000 + x \cdot kek} \cdot (kek + x)$

If someone asked me that in the middle of the night, I wouldn't hesitate to say:

$(\frac{1.000}{1.000 + x \cdot kek} \cdot (kek + x))' = \ldots = [\text{top secret}] = \ldots =$
$= \frac{(-1.000) \cdot (kek + x)}{(1.000 + x \cdot kek)^{2.000}} \cdot (kek + x) + 2.000 \cdot \frac{1.000}{1.000 + x \cdot kek}$

`12 step:` Finding a derivation of kek

My friends always beat me, because I didn't know that:

$(kek)' = \ldots = [\text{top secret}] = \ldots =$
$= 1.000$

`13 step:` Finding a derivation of $\sin kek$

What if:

$(\sin kek)' = \ldots = [\text{top secret}] = \ldots =$
$= \cos kek$

`14 step:` Finding a derivation of -1.000

Sounds logical that it is the same as:

$(-1.000)' = \ldots = [\text{top secret}] = \ldots =$
$= 0.000$

`15 step:` Finding a derivation of $(-1.000) \cdot \sin kek$

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

$((-1.000) \cdot \sin kek)' = \ldots = [\text{top secret}] = \ldots =$
$= (-1.000) \cdot \cos kek$

`16 step:` Finding a derivation of $(-1.000) \cdot \sin kek + \frac{1.000}{1.000 + x \cdot kek} \cdot (kek + x)$

Even my two-aged sister knows that:

$((-1.000) \cdot \sin kek + \frac{1.000}{1.000 + x \cdot kek} \cdot (kek + x))' = \ldots = [\text{top secret}] = \ldots =$
$= (-1.000) \cdot \cos kek + \frac{(-1.000) \cdot (kek + x)}{(1.000 + x \cdot kek)^{2.000}} \cdot (kek + x) + 2.000 \cdot \frac{1.000}{1.000 + x \cdot kek}$

Finally... The 2 derivation of the expression:

$f^{(2)}(\text{kek, x}) = (-1.000) \cdot \cos kek + \frac{(-1.000) \cdot (kek + x)}{(1.000 + x \cdot kek)^{2.000}} \cdot (kek + x) + 2.000 \cdot \frac{1.000}{1.000 + x \cdot kek}$

BRITISH SCIENTISTS WERE SHOCKED AGAIN, WHEN THEY COUNT THE 2 DERIVATION OF THIS EXPRESSION!!!

In the point $M_0(kek_0, x_0) = (13.000, 1.000)$ it's value = -1.76459

Finding partical derivations Partial derivation of the expression on the variable kek:
$\frac{\partial f}{\partial kek} = (-1.000) \cdot \sin kek + \frac{1.000}{1.000+kek}$
In the point $M_0(kek_0,\, x_0) = (13.000,\, 1.000)$ it's value = -0.34874 !!!
Partial derivation of the expression on the variable x:
$\frac{\partial f}{\partial x} = 13.000 \cdot \frac{1.000}{1.000+13.000 \cdot x}$
In the point $M_0(kek_0,\, x_0) = (13.000,\, 1.000)$ it's value = 0.92857 !!!

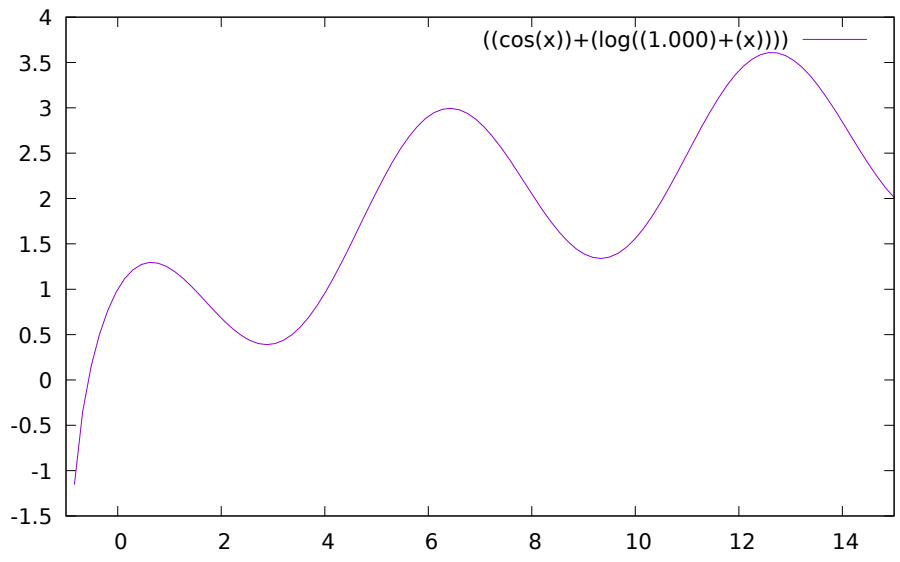
Finding full derivation Full derivation:
$\sqrt{((-1.000) \cdot \sin kek + \frac{1.000}{1.000+kek})^{2.000} + (13.000 \cdot \frac{1.000}{1.000+13.000 \cdot x})^{2.000}}$
In the point $M_0(kek_0,\, x_0) = (13.000,\, 1.000)$ it's value = 0.99190 !!!

4 Exploration the expression as a function of the first variable

Now let's consider the expression as a function of kek variable: f(kek) $= \cos kek + \ln(1.000 + kek)$

Decomposing on Macloren's formula **Maklorens formula for** $kek \to kek_0 = 13.000$:
f(kek) $= 3.547 + (-0.349) \cdot (kek - 13.000) + (-0.456) \cdot (kek - 13.000)^{2.000} + 0.070 \cdot (kek - 13.000)^{3.000} + o((kek - 13.000)^{3.000})$

Graphics **Graph** f(kek) $= \cos kek + \ln(1.000 + kek)$ on the diapasone $kek \in [-1 : 15]$:



Equations in the point **Tangent equation** in the point $kek_0 = 0.200$:
f(kek) $= 0.635 \cdot (kek - 0.200) + 1.162$
Normal equation in the point $kek_0 = 0.200$:
f(kek) $= (-1.576) \cdot (kek - 0.200) + 1.162$
Their graphs in $\delta = 2.50000$ coverage of the point $kek_0 = 0.200000$