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 (3):
a = 3.141500
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(a, kek, x) $= \cos\left(a + \frac{kek}{1.000^{AbObA}}\right) + \ln\left(1.000 + x \cdot kek \cdot \left(1.000^{(\ln e)} - 0.000\right)\right)$

Firstly, let's insert all constants:

f(a, kek, x) $= \cos\left(a + \frac{kek}{1.000^{1337.229}}\right) + \ln\left(1.000 + x \cdot kek \cdot \left(1.000^{(\ln 2.718)} - 0.000\right)\right)$

And simplify this expression (if possible):

f(a, kek, x) $= \cos\left(a + kek\right) + \ln\left(1.000 + x \cdot kek\right)$

3 Exploration the expression as a function of multiple variables

- Calculation a value of function in the point

BRITISH SCIENTISTS WERE SHOCKED, WHEN THEY COUNT IT!!!
In the point $M_0(a_0,\, kek_0,\, x_0) = (3.142,\, 13.000,\, 1.000)$ expression's value = 1.73157

- Finding the first derivation of function

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!

11pt1 `step:` Finding a derivation of kek

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

$(kek)' =$

$= 1.000$

11pt2 `step:` Finding a derivation of x

Only after two cups of beer you might understand it:

$(x)' =$

$= 1.000$

11pt3 `step:` Finding a derivation of $x \cdot kek$

Never say it to girls:

$(x \cdot kek)' =$

$= kek + x$

11pt4 `step:` Finding a derivation of 1.000

Only by using special skills we might know::

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

$= 0.000$

11pt5 `step:` Finding a derivation of $1.000 + x \cdot kek$

What if:

$(1.000 + x \cdot kek)' =$

$= kek + x$

11pt6 `step:` Finding a derivation of $\ln(1.000 + x \cdot kek)$

Even my two-aged sister knows that:

$(\ln(1.000 + x \cdot kek))' =$

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

11pt7 `step:` Finding a derivation of kek

The first task in MIPT was to calculate:

$(kek)' =$

$= 1.000$

11pt8 `step:` Finding a derivation of a

Never say it to girls:

$(a)' =$

$= 1.000$

11pt9 `step:` Finding a derivation of $a + kek$

It's simple as fuck:

$(a + kek)' =$ **... = [top secret] = ...** $=$

$= 2.000$

11pt10 `step:` Finding a derivation of $\cos(a + kek)$

As we know:

$(\cos(a + kek))' =$

$= 2.000 \cdot (-1.000) \cdot \sin(a + kek)$

11pt11 `step:` Finding a derivation of $\cos(a + kek) + \ln(1.000 + x \cdot kek)$

I was asked not to tell anyone that:

$(\cos(a + kek) + \ln(1.000 + x \cdot kek))' =$

$= 2.000 \cdot (-1.000) \cdot \sin(a + kek) + \frac{1.000}{1.000 + x \cdot kek} \cdot (kek + x)$

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

f′(a, kek, x) $= 2.000 \cdot (-1.000) \cdot \sin(a + kek) + \frac{1.000}{1.000 + x \cdot kek} \cdot (kek + x)$

In the point $M_0(a_0, kek_0, x_0) = (3.142, 13.000, 1.000)$ it's value $= 1.84017$

- Finding the 2 derivation

1) Let's find **the 1 derivation** of the given function:

11pt1 `step:` Finding a derivation of kek

Only after two cups of beer you might understand it:

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

$= 1.000$

11pt2 `step:` Finding a derivation of x

Even my two-aged sister knows that:

$(x)' =$

$= 1.000$

11pt3 `step:` Finding a derivation of $x \cdot kek$

Even my two-aged sister knows that:

$(x \cdot kek)' =$

$= kek + x$

11pt4 `step:` Finding a derivation of 1.000

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

$(1.000)' =$

$= 0.000$

11pt5 `step:` Finding a derivation of $1.000 + x \cdot kek$

I have no words to describe this fact:

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

$= kek + x$

11pt6 `step:` Finding a derivation of $\ln(1.000 + x \cdot kek)$

My roommate mumbled it in his sleep all night:

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

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

11pt7 `step:` Finding a derivation of kek

I have no words to describe this fact:

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

$= 1.000$

11pt8 `step:` Finding a derivation of a

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

$(a)' =$

$= 1.000$

11pt9 `step:` Finding a derivation of $a + kek$

It's really easy to find:

$(a + kek)' =$

$= 2.000$

11pt10 `step:` Finding a derivation of $\cos(a + kek)$

What if:

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

$= 2.000 \cdot (-1.000) \cdot \sin(a + kek)$

11pt11 `step:` Finding a derivation of $\cos(a + kek) + \ln(1.000 + x \cdot kek)$

You should be aware of the fact that:

$(\cos(a + kek) + \ln(1.000 + x \cdot kek))' =$

$= 2.000 \cdot (-1.000) \cdot \sin(a + kek) + \frac{1.000}{1.000 + x \cdot kek} \cdot (kek + x)$

So **the 1 derivation** of the function is:

$$2.000 \cdot (-1.000) \cdot \sin(a + kek) + \frac{1.000}{1.000 + x \cdot kek} \cdot (kek + x)$$

2) Let's find **the 2 derivation** of the given function:

11pt1 `step:` Finding a derivation of x

A true prince must know that:

$(x)' =$

$= 1.000$

11pt2 `step:` Finding a derivation of kek

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

$(kek)' =$

$= 1.000$

11pt3 `step:` Finding a derivation of $kek + x$

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

$(kek + x)' =$ **... = [top secret] = ...** $=$

$= 2.000$

11pt4 `step:` Finding a derivation of kek

Never say it to girls:

$(kek)' =$

$= 1.000$

11pt5 `step:` Finding a derivation of x

It's really easy to find:

$(x)' =$

$= 1.000$

11pt6 `step:` Finding a derivation of $x \cdot kek$

Sometimes I hear the same voice in my head, it always says:

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

$= kek + x$

11pt7 `step:` Finding a derivation of 1.000

Even my two-aged sister knows that:

$(1.000)' =$

$= 0.000$

11pt8 `step:` Finding a derivation of $1.000 + x \cdot kek$

Only by using special skills we might know::

$(1.000 + x \cdot kek)' =$

$= kek + x$

11pt9 `step:` Finding a derivation of 1.000

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

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

$= 0.000$

11pt10 `step:` Finding a derivation of $\frac{1.000}{1.000 + x \cdot kek}$

A true prince must know that:

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

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

11pt11 `step:` Finding a derivation of $\frac{1.000}{1.000 + x \cdot kek} \cdot (kek + x)$

Sometimes I hear the same voice in my head, it always says:

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

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

11pt12 `step:` Finding a derivation of kek

Only by using special skills we might know::

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

$= 1.000$

11pt13 `step:` Finding a derivation of a

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

$(a)' =$

$= 1.000$

11pt14 `step:` Finding a derivation of $a + kek$

She: please, never speak with my dad about math... Me: ok) Also me after homework of matan:

$(a + kek)' =$ **... = [top secret] = ... =**

$= 2.000$

11pt15 `step:` Finding a derivation of $\sin(a + kek)$

My roommate mumbled it in his sleep all night:

$(\sin(a + kek))' =$ **... = [top secret] = ... =**

$= 2.000 \cdot \cos(a + kek)$

11pt16 `step:` Finding a derivation of -1.000

A true prince must know that:

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

$= 0.000$

11pt17 `step:` Finding a derivation of $(-1.000) \cdot \sin(a + kek)$

A true prince must know that:

$((-1.000) \cdot \sin(a + kek))' =$

$= (-1.000) \cdot 2.000 \cdot \cos(a + kek)$

11pt18 `step:` Finding a derivation of 2.000

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

$(2.000)' =$

$= 0.000$

11pt19 `step:` Finding a derivation of $2.000 \cdot (-1.000) \cdot \sin(a + kek)$

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

$(2.000 \cdot (-1.000) \cdot \sin(a + kek))' =$ **... = [top secret] = ... =**

$= 2.000 \cdot (-1.000) \cdot 2.000 \cdot \cos(a + kek)$

11pt20 `step:` Finding a derivation of $2.000 \cdot (-1.000) \cdot \sin(a + kek) + \frac{1.000}{1.000+x \cdot kek} \cdot (kek + x)$

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

$(2.000 \cdot (-1.000) \cdot \sin(a + kek) + \frac{1.000}{1.000+x \cdot kek} \cdot (kek + x))' =$

$= 2.000 \cdot (-1.000) \cdot 2.000 \cdot \cos(a + kek) + \frac{(-1.000) \cdot (kek+x)}{(1.000+x \cdot kek)^{2.000}} \cdot (kek + x) + 2.000 \cdot \frac{1.000}{1.000+x \cdot kek}$

So **the 2 derivation** of the function is:

$$2.000 \cdot (-1.000) \cdot 2.000 \cdot \cos(a + kek) + \frac{(-1.000) \cdot (kek+x)}{(1.000+x \cdot kek)^{2.000}} \cdot (kek + x) + 2.000 \cdot \frac{1.000}{1.000+x \cdot kek}$$

Finally... The 2 derivation of the expression:

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

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

In the point $M_0(a_0,\ kek_0,\ x_0) = (3.142,\ 13.000,\ 1.000)$ it's value $= 2.77280$

Finding partical derivations

Partial derivation of the expression on the variable a:

$\frac{\partial f}{\partial a} = (-1.000) \cdot \sin(a + 13.000)$

In the point $M_0(a_0,\ kek_0,\ x_0) = (3.142,\ 13.000,\ 1.000)$ it's value $= 0.42008$!!!

Partial derivation of the expression on the variable kek:

$\frac{\partial f}{\partial kek} = (-1.000) \cdot \sin(3.142 + kek) + \frac{1.000}{1.000+kek}$

In the point $M_0(a_0,\ kek_0,\ x_0) = (3.142,\ 13.000,\ 1.000)$ it's value $= 0.49151$!!!

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 $M_0(a_0,\ kek_0,\ x_0) = (3.142,\ 13.000,\ 1.000)$ it's value $= 0.92857$!!!

Finding full derivation

Full derivation:

$\sqrt{((-1.000) \cdot \sin(a + 13.000))^{2.000} + ((-1.000) \cdot \sin(3.142 + kek) + \frac{1.000}{1.000+kek})^{2.000} + (13.000 \cdot \frac{1.000}{1.000+13.000\cdot x})^{2.000}}$

In the point $M_0(a_0,\ kek_0,\ x_0) = (3.142,\ 13.000,\ 1.000)$ it's value $= 1.13150$!!!

4 Exploration the expression as a function of the first variable

Now let's consider the expression as a function of the first variable a: $\mathrm{f(a)} = \cos(a + 13.000) + 2.639$

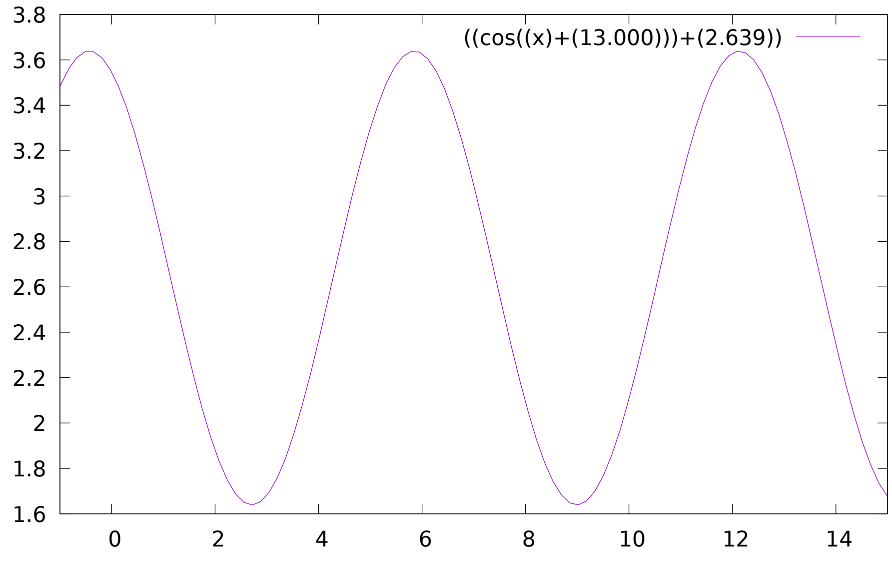
Decomposing on Macloren's formula

Maklorens formula for $a \to a_0 = 3.142$:

$\mathrm{f(a)} = 1.732 + 0.420 \cdot (a - 3.142) + 0.454 \cdot (a - 3.142)^{2.000} + (-0.070) \cdot (a - 3.142)^{3.000} + \mathrm{o}((a - 3.142)^{3.000})$

Graphics

Graph $\mathrm{f(a)} = \cos(a + 13.000) + 2.639$ on the diapasone $a \in [-1 : 15]$:



Equations in the point

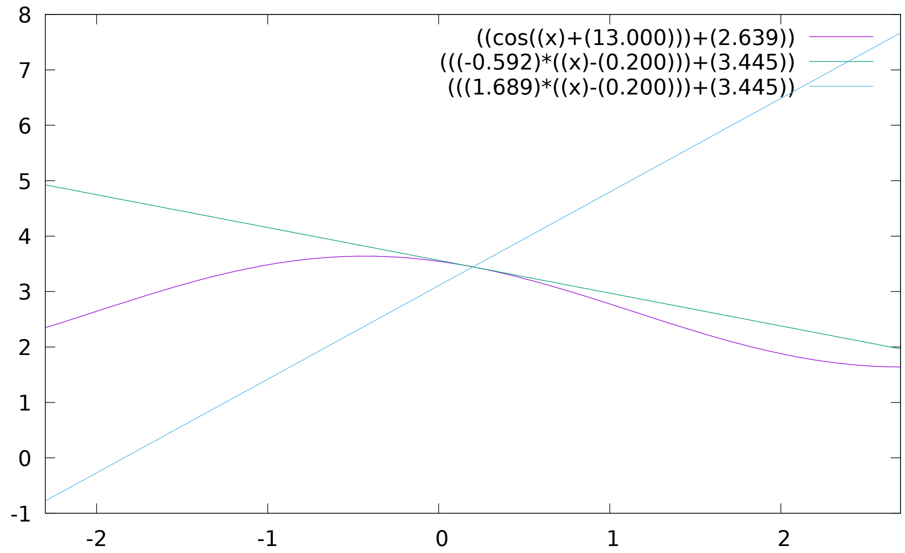
Tangent equation in the point $a_0 = 0.200$:

$\mathrm{f(a)} = (-0.592) \cdot (a - 0.200) + 3.445$

Normal equation in the point $a_0 = 0.200$:

$\mathrm{f(a)} = 1.689 \cdot (a - 0.200) + 3.445$

Their graphs in $\delta = 2.50000$ coverage of the point $a_0 = 0.200000$



5 Conclusion

$Ultrarcringeconclusionhere:$