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:

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

Firstly, let's insert all constants:

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

And simplify this expression (if possible):

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

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!

`1 step:` Finding a derivation of kekWhile preparing for exams, I learned a lot of new things, for example: $(kek)' =$

$= 1.000$

`2 step:` Finding a derivation of xOnly after two cups of beer you might understand it: $(x)' =$

$= 1.000$

`3 step:` Finding a derivation of $x \cdot kek$Never say it to girls: $(x \cdot kek)' =$

$= kek + x$

`4 step:` Finding a derivation of 1.000Only by using special skills we might know:: $(1.000)' =$ **... = [top secret] = ...** $=$

$= 0.000$

`5 step:` Finding a derivation of $1.000 + x \cdot kek$What if: $(1.000 + x \cdot kek)' =$

$= kek + x$

`6 step:` Finding a derivation of $\ln\left(1.000 + x \cdot kek\right)$Even my two-aged sister knows that: $(\ln\left(1.000 + x \cdot kek\right))' =$

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

`7 step:` Finding a derivation of kekThe first task in MIPT was to calculate: $(kek)' =$

$= 1.000$

`8 step:` Finding a derivation of aNever say it to girls: $(a)' =$

$= 1.000$

`9 step:` Finding a derivation of $a + kek$It's simple as fuck: $(a + kek)' =$ **... = [top secret] = ...** $=$

$= 2.000$

`10 step:` Finding a derivation of $\cos\left(a + kek\right)$As we know: $(\cos\left(a + kek\right))' =$

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

`11 step:` Finding a derivation of $\cos\left(a + kek\right) + \ln\left(1.000 + x \cdot kek\right)$I was asked not to tell anyone that: $(\cos\left(a + kek\right) + \ln\left(1.000 + x \cdot kek\right))'$
$=$

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

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

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

`1 step:` Finding a derivation of kekOnly after two cups of beer you might understand it: $(kek)' =$ **... = [top secret] = ...** $=$

$= 1.000$

`2 step:` Finding a derivation of xEven my two-aged sister knows that: $(x)' =$

$= 1.000$

`3 step:` Finding a derivation of $x \cdot kek$Even my two-aged sister knows that: $(x \cdot kek)' =$

$= kek + x$

`4 step:` Finding a derivation of 1.000When I was a child, my father always told me: "Remember, son: $(1.000)' =$

$= 0.000$

`5 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] = ...** $=$

$= kek + x$

`6 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] = ...** $=$

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

`7 step:` Finding a derivation of kekI have no words to describe this fact: $(kek)' =$ **... = [top secret] = ...** $=$

$= 1.000$

`8 step:` Finding a derivation of aWhile preparing for exams, I learned a lot of new things, for example: $(a)' =$

$= 1.000$

`9 step:` Finding a derivation of $a + kek$It's really easy to find: $(a + kek)' =$

$= 2.000$

`10 step:` Finding a derivation of $\cos(a + kek)$What if: $(\cos(a + kek))' =$ **... = [top secret] = ...** $=$

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

`11 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 expression is:
$2.000 \cdot (-1.000) \cdot \sin(a + kek) + \frac{1.000}{1.000 + x \cdot kek} \cdot (kek + x)$

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

`1 step:` Finding a derivation of xA true prince must know that: $(x)' =$

$= 1.000$

`2 step:` Finding a derivation of kekFor centuries, people have hunted for the secret knowledge that: $(kek)' =$

$= 1.000$

`3 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] = ...** $=$

$= 2.000$

`4 step:` Finding a derivation of kekNever say it to girls: $(kek)' =$

$= 1.000$

`5 step:` Finding a derivation of xIt's really easy to find: $(x)' =$

$= 1.000$

`6 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] = ...** $=$

$= kek + x$

`7 step:` Finding a derivation of 1.000Even my two-aged sister knows that: $(1.000)' =$

$= 0.000$

`8 step:` Finding a derivation of $1.000 + x \cdot kek$Only by using special skills we might know:: $(1.000 + x \cdot kek)' =$

$= kek + x$

`9 step:` Finding a derivation of 1.000My friends always beat me, because I didn't know that: $(1.000)' =$ **... = [top secret] = ...** $=$

$= 0.000$

`10 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] = ...** $=$

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

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

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

`12 step:` Finding a derivation of kekOnly by using special skills we might know:: $(kek)' =$ **... = [top secret] = ...** $=$

$= 1.000$

`13 step:` Finding a derivation of aWhile preparing for exams, I learned a lot of new things, for example: $(a)' =$

$= 1.000$

`14 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] = ...** $=$

$= 2.000$

`15 step:` Finding a derivation of $\sin(a + kek)$My roommate mumbled it in his sleep all night: $(\sin(a + kek))' =$ **... = [top secret] = ...** $=$

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

`16 step:` Finding a derivation of -1.000A true prince must know that: $(-1.000)' =$ **... = [top secret] = ...** $=$

$= 0.000$

`17 step:` Finding a derivation of $(-1.000) \cdot \sin(a + kek)$A true prince must know that: $((-1.000) \cdot \sin(a + kek))' =$

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

`18 step:` Finding a derivation of 2.000If someone asked me that in the middle of the night, I wouldn't hesitate to say: $(2.000)' =$

$= 0.000$

`19 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: $(2.000 \cdot (-1.000) \cdot \sin(a +$
$=$ **... = [top secret] = ...** $=$

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

`20 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 expression 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:
$f^{(2)}(\text{a, kek, x}) = 2.000 \cdot (-1.000) \cdot 2.000 \cdot \cos(a + kek) + \frac{(-1.000) \cdot (kek+x)}{(1.000+x \cdot kek)^{2.000}} \cdot (kek + x) + 2.000 \cdot \frac{1.000}{1.000+x \cdot kek}$
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 $= 0.92857$!!!

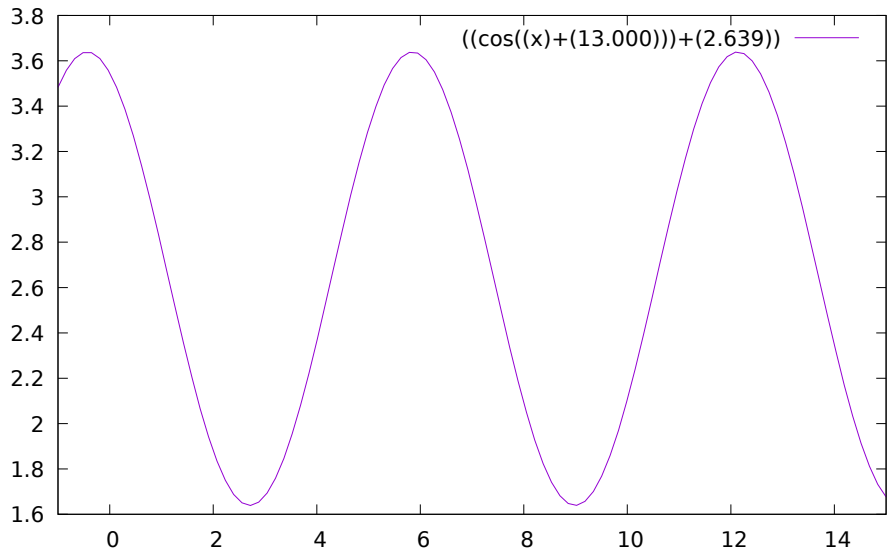
Finding full derivation Full derivation:
$\sqrt{((-1.000) \cdot \sin(a + 13.000))^{2.000} + ((-1.000) \cdot \sin(3.142 + kek) + \frac{1.000}{1.000+kek})^{2.000} + (13.000 \cdot \frac{1.000}{1.000+13.000 \cdot x})^{2.000}}$
In the point $M_0(a_0, kek_0, x_0) = (3.142, 13.000, 1.000)$ it's value $= 1.13150$!!!

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: $\text{f(a)} = \cos(a + 13.000) + 2.639$

Decomposing on Macloren's formula **Maklorens formula for $a \to a_0 = 3.142$:**
$\text{f(a)} = 1.732 + 0.420 \cdot (a - 3.142) + 0.454 \cdot (a - 3.142)^{2.000} + (-0.070) \cdot (a - 3.142)^{3.000} + \text{o}((a - 3.142)^{3.000})$

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



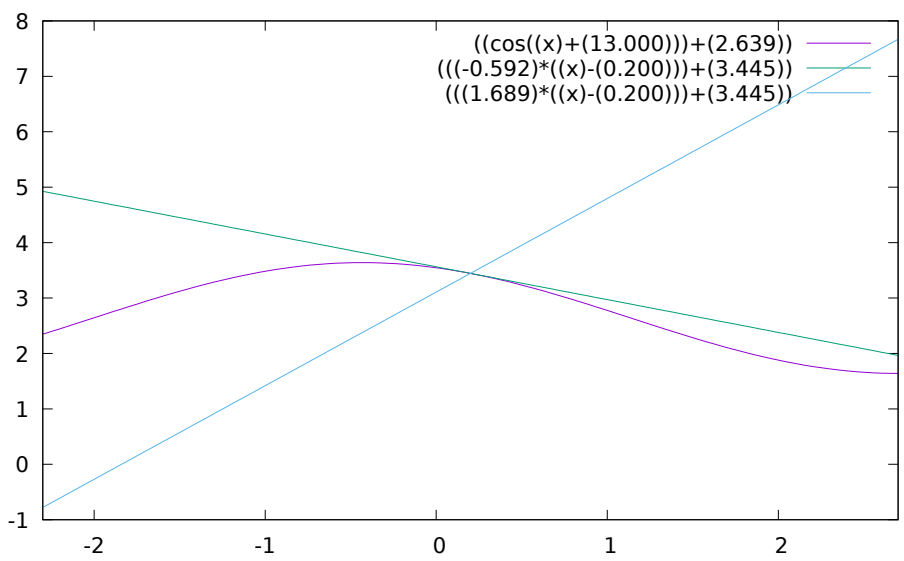
Equations in the point **Tangent equation** in the point $a_0 = 0.200$:

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

Normal equation in the point $a_0 = 0.200$:

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 :