# 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 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) **it's value** = 1.73157
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 $kek$
While preparing for exams, I learned a lot of new things, for example:
$(kek)' =$
$= 1.000$
`2 step:` Finding a derivation of $x$
Only 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 1.000
Only 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:
$(\ln\left(1.000 + x\cdot kek\right))' =$
$= \frac{1.000}{1.000+x\cdot kek}\cdot\left(kek + x\right)$
`7 step:` Finding a derivation of $kek$
The first task in MIPT was to calculate:
$(kek)' =$
$= 1.000$
`8 step:` Finding a derivation of $a$
Never 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:
$(\cos\left(a + kek\right))' =$
$= 2.000\cdot\left(-1.000\right)\cdot\sin\left(a + kek\right)$
`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:
$(\cos\left(a + kek\right)+\ln\left(1.000 + x\cdot kek\right))' =$
$= 2.000\cdot\left(-1.000\right)\cdot\sin\left(a + kek\right)+\frac{1.000}{1.000+x\cdot kek}\cdot\left(kek + x\right)$
Congratulations! **The first derivation of the expression** is:
f'(a, kek, x) = $2.000\cdot\left(-1.000\right)\cdot\sin\left(a + kek\right)+\frac{1.000}{1.000+x\cdot kek}\cdot\left(kek + x\right)$
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 $kek$
Only after two cups of beer you might understand it:
$(kek)' =$ **... = [top secret] = ...** =

$= 1.000$
`2 step:` Finding a derivation of $x$
Even 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 $1.000$
When 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 $kek$
I have no words to describe this fact:
$(kek)' =$ **... = [top secret] = ...** $=$
$= 1.000$
`8 step:` Finding a derivation of $a$
While 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 $x$
A true prince must know that:
$(x)' =$
$= 1.000$
`2 step:` Finding a derivation of $kek$
For 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 $kek$
Never say it to girls:
$(kek)' =$
$= 1.000$
`5 step:` Finding a derivation of $x$
It'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 $1.000$
Even 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 $1.000$
My 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 $kek$

Only by using special skills we might know::
$(kek)' = $ **... = [top secret] = ...** $=$
$= 1.000$
`13 step:` Finding a derivation of $a$
While 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 $-1.000$
A 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 $2.000$
If 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 + kek))' = $ **... = [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 $= 1.13150$ !!!

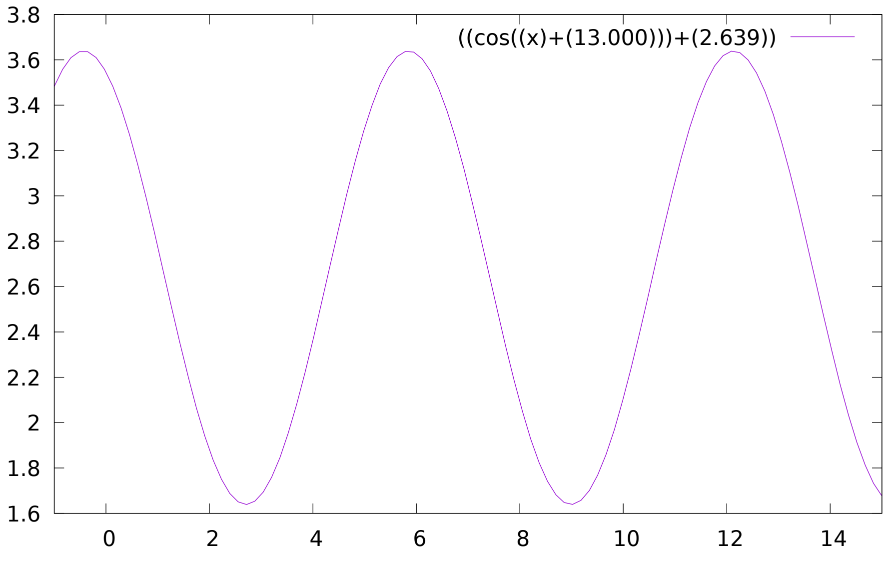
## 4 Exploration the expression as a function of the first variable

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

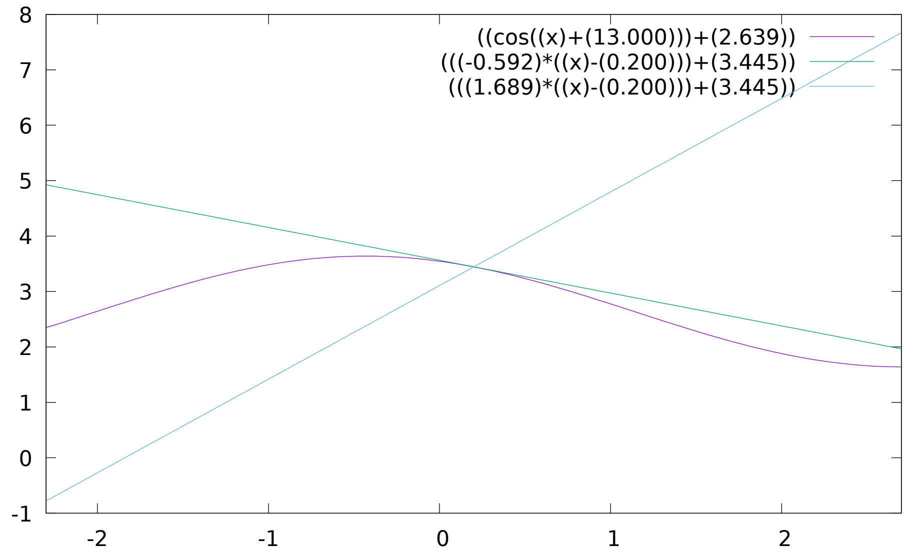
**Decomposing on Macloren's formula** **Maklorens formula for** $a \to a_0 = 3.142$:

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

**Graphics** **Graph** 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

$Ultrarcringeconclusionhere:$