

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 (a + (kek / 1.000AbObA) ) + ln (1.000 + x · kek · (1.000(ln e) - 0.000))

Firstly, let's insert all constants:

f(a, kek, x) = cos (a + (kek / 1.0001337.229) ) + ln (1.000 + x · kek · (1.000(ln 2.718) - 0.000))

And simplify this expression (if possible):

f(a, kek, x) = cos (a + kek) + ln (1.000 + x · kek)

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 M0(a0, kek0, x0) = (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 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 · kek

Never say it to girls:

(x · kek)' =  
  
= kek + x

4 step: Finding a derivation of 1.000

Only by using special skills we might know::

$$\begin{aligned}(1.000)' &= \dots = \text{[top secret]} = \dots = \\ &= 0.000\end{aligned}$$

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

What if:

$$\begin{aligned}(1.000 + x \cdot kek)' &= \\ &= kek + x\end{aligned}$$

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

Even my two-aged sister knows that:

$$\begin{aligned}(\ln(1.000 + x \cdot kek))' &= \\ &= \frac{1.000}{1.000 + x \cdot kek} \cdot (kek + x)\end{aligned}$$

**7 step:** Finding a derivation of  $kek$

The first task in MIPT was to calculate:

$$\begin{aligned}(kek)' &= \\ &= 1.000\end{aligned}$$

**8 step:** Finding a derivation of  $a$

Never say it to girls:

$$\begin{aligned}(a)' &= \\ &= 1.000\end{aligned}$$

**9 step:** Finding a derivation of  $a + kek$

It's simple as fuck:

$$\begin{aligned}(a + kek)' &= \dots = \text{[top secret]} = \dots = \\ &= 2.000\end{aligned}$$

**10 step:** Finding a derivation of  $\cos(a + kek)$

As we know:

$$\begin{aligned}(\cos(a + kek))' &= \\ &= 2.000 \cdot (-1.000) \cdot \sin(a + kek)\end{aligned}$$

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

I was asked not to tell anyone that:

$$\begin{aligned}(\cos(a + kek) + \ln(1.000 + x \cdot kek))' &= \\ &= 2.000 \cdot (-1.000) \cdot \sin(a + kek) + \frac{1.000}{1.000 + x \cdot kek} \cdot (kek + x)\end{aligned}$$

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:

**1 step:** Finding a derivation of  $kek$

Only after two cups of beer you might understand it:

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

**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:

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

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

My roommate mumbled it in his sleep all night:

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

**7 step:** Finding a derivation of  $kek$

I have no words to describe this fact:

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

**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:

$$\begin{aligned}(a + kek)' &= \\ &= 2.000\end{aligned}$$

10 **step**: Finding a derivation of  $\cos(a + kek)$

What if:

$$\begin{aligned}(\cos(a + kek))' &= \dots = \text{[top secret]} = \dots = \\ &= 2.000 \cdot (-1.000) \cdot \sin(a + kek)\end{aligned}$$

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

You should be aware of the fact that:

$$\begin{aligned}(\cos(a + kek) + \ln(1.000 + x \cdot kek))' &= \\ &= 2.000 \cdot (-1.000) \cdot \sin(a + kek) + \frac{1.000}{1.000 + x \cdot kek} \cdot (kek + x)\end{aligned}$$

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:

1 **step**: Finding a derivation of  $x$

A true prince must know that:

$$\begin{aligned}(x)' &= \\ &= 1.000\end{aligned}$$

2 **step**: Finding a derivation of  $kek$

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

$$\begin{aligned}(kek)' &= \\ &= 1.000\end{aligned}$$

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

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

$$\begin{aligned}(kek + x)' &= \dots = \text{[top secret]} = \dots = \\ &= 2.000\end{aligned}$$

4 **step**: Finding a derivation of  $kek$

Never say it to girls:

$$\begin{aligned}(kek)' &= \\ &= 1.000\end{aligned}$$

5 **step**: Finding a derivation of  $x$

It's really easy to find:

$$\begin{aligned}(x)' &= \\ &= 1.000\end{aligned}$$

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

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

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

**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:

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

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

A true prince must know that:

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

**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::

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

**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:

$$(a + kek)' = \dots = \text{[top secret]} = \dots =$$

$$= 2.000$$

15 step: Finding a derivation of  $\sin(a + kek)$

My roommate mumbled it in his sleep all night:

$$(\sin(a + kek))' = \dots = \text{[top secret]} = \dots =$$

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

16 step: Finding a derivation of  $-1.000$

A true prince must know that:

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

$$= 0.000$$

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:

$$(2.000 \cdot (-1.000) \cdot \sin(a + kek))' = \dots = \text{[top secret]} = \dots =$$

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

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 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:**

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

BRITISH SCIENTISTS WERE SHOCKED AGAIN, BECAUSE THEY COUNT THE 2 DERIVATION OF THIS FUNCTION!!!

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

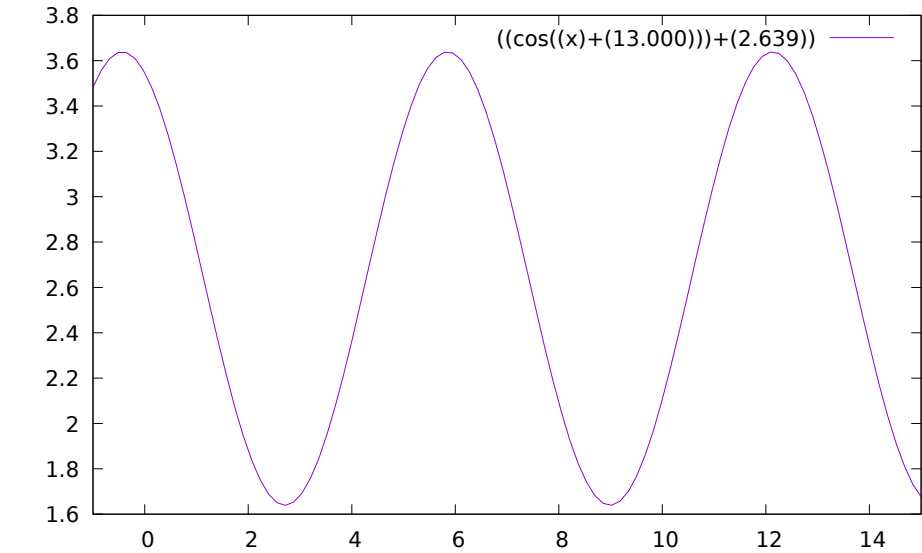
In this part of the article let's consider the expression as a function of the first variable a:

$$f(a) = \cos(a + 13.000) + 2.639$$

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

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

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



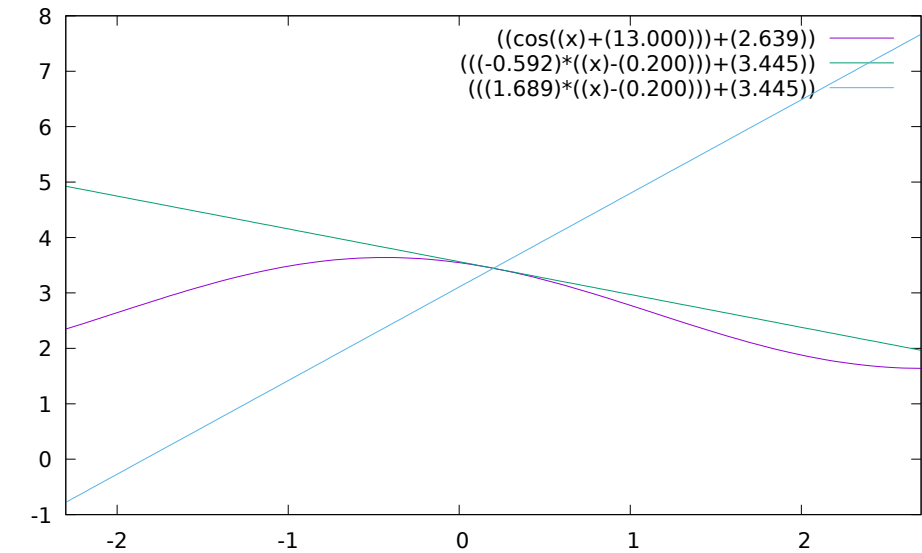
**Equations in the point** Tangent equation in the point  $a_0 = 0.200$ :

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

**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

*Ultracringeconclusionhere :*