1 Introduction

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

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

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

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

$(kek)' =$

$= 1.000$

2 step: Finding a derivation of x

What if:

$(x)' =$

$= 1.000$

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

It's really easy to find:

$(x \cdot kek)' =$

$= kek + x$

4 step: Finding a derivation of 1.000

Sounds logical that it is the same as:

$(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 $\ln{(1.000 + x \cdot kek)}$

Sounds logical that it is the same as:

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

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

7 step: Finding a derivation of kek

Even my two-aged sister knows that:

$(kek)' =$

$= 1.000$

8 step: Finding a derivation of a

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

$(a)' =$

$= 1.000$

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

My roommate mumbled it in his sleep all night:

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

$= 2.000$

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

Man... Just look:

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

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

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

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:

$(x)' =$

$= 1.000$

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

A true prince must know that:

$(x \cdot kek)' =$

$= kek + x$

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:

$(1.000)' =$

$= 0.000$

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

What if:

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

$= kek + x$

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

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

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

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

7 step: Finding a derivation of kek

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

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

$= 1.000$

8 step: Finding a derivation of a

It's really easy to find:

$(a)' =$

$= 1.000$

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

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

$(a + kek)' =$

$= 2.000$

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

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

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

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

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

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

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

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

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

1 step: Finding a derivation of x

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

$(x)' =$

$= 1.000$

2 step: Finding a derivation of kek

A true prince must know that:

$(kek)' =$

$= 1.000$

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

I was asked not to tell anyone that:

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

$= 2.000$

4 step: Finding a derivation of kek

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

$(kek)' =$

$= 1.000$

5 step: Finding a derivation of x

I was asked not to tell anyone that:

$(x)' =$

$= 1.000$

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

Man... Just look:

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

$= kek + x$

7 step: Finding a derivation of 1.000

A true prince must know that:

$(1.000)' =$

$= 0.000$

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

Man... Just look:

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

$= kek + x$

9 step: Finding a derivation of 1.000

It's really easy to find:

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

$= 0.000$

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

My roommate mumbled it in his sleep all night:

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

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

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

It's simple as fuck:

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

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

12 step: Finding a derivation of kek

A true prince must know that:

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

$= 1.000$

13 step: Finding a derivation of a

It's really easy to find:

$(a)' =$

$= 1.000$

14 step: Finding a derivation of $a + kek$

My roommate mumbled it in his sleep all night:

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

$= 2.000$

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

A true prince must know that:

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

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

16 step: Finding a derivation of -1.000

A true prince must know that:

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

$= 0.000$

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

Sounds logical that it is the same as:

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

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

18 step: Finding a derivation of 2.000

I was asked not to tell anyone that:

$(2.000)' =$

$= 0.000$

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

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

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

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

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

My roommate mumbled it in his sleep all night:

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

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

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, 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 a variable: $f(a) = \cos(a + 13.000) + 2.639$

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

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

Graphics Graph $f(a) = \cos(a + 13.000) + 2.639$ on the diapasone $a \in [-1 : 15]$:
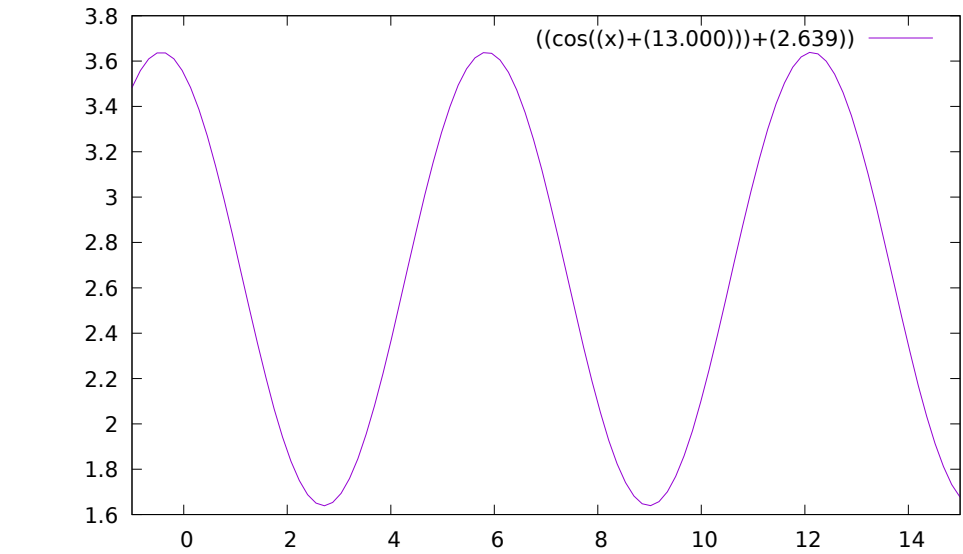
Equations in the point **Tangent equation** in the point $a_0 = 0.200$:

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

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 $a_0 = 0.200000$

((cos((x)+(13.000)))+(2.639))
(((-0.592)*((x)-(0.200)))+(3.445))
(((1.689)*((x)-(0.200)))+(3.445))