sectionIntroduction

1 Some basic knowledge about researching problem...

Let's calculate smth with a given function: f(x, y) = $(\sin(x \cdot y))^{3.000}$

Firstly, let's simplify this expression (if possible): f(x, y) = $(\sin(x \cdot y))^{3.000}$

2 Exploration of 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 $M_0(x_0, y_0)$ = (3.142, 2.000) **it's value** = -0.00000

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 y

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

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

$= 1.000$

2 **step:** Finding a derivation of x

It's really easy to find:

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

$= 1.000$

3 **step:** Finding a derivation of $x \cdot y$

My roommate mumbled it in his sleep all night:

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

$= y + x$

4 **step:** Finding a derivation of $\sin(x \cdot y)$

Sounds logical that it is the same as:

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

$= \cos(x \cdot y) \cdot (y + x)$

5 **step:** Finding a derivation of $(\sin(x \cdot y))^{3.000}$

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

$((\sin(x \cdot y))^{3.000})' = ... = [\text{top secret}] = ... =$

$= 3.000 \cdot (\sin(x \cdot y))^{3.000} \cdot \cos(x \cdot y) \cdot (y + x)$

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

f'(x, y) = $3.000 \cdot (\sin(x \cdot y))^{2.000} \cdot \cos(x \cdot y) \cdot (y + x)$

In the point $M_0(x_0, y_0)$ = (3.142, 2.000) it's value = 0.00000

Finding the 3 derivation Let's find **the 1 derivation** of the expression:

1 **step:** Finding a derivation of y

Sounds logical that it is the same as:

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

$= 1.000$

2 **step:** Finding a derivation of x

It's really easy to find:

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

$= 1.000$

3 **step:** Finding a derivation of $x \cdot y$

My roommate mumbled it in his sleep all night:

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

$= y + x$

4 **step:** Finding a derivation of $\sin(x \cdot y)$

What if:

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

$= \cos(x \cdot y) \cdot (y + x)$

5 **step:** Finding a derivation of $(\sin(x \cdot y))^{3.000}$

It's really easy to find:

$((\sin(x \cdot y))^{3.000})' = ... = [\text{top secret}] = ... =$

$= 3.000 \cdot (\sin(x \cdot y))^{2.000} \cdot \cos(x \cdot y) \cdot (y + x)$

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

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

Even my two-aged sister knows that:

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

$= 1.000$

2 **step:** Finding a derivation of y

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

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

$= 1.000$

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

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

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

$= 2.000$

4 **step:** Finding a derivation of y

Man... Just look:

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

$= 1.000$

5 step: Finding a derivation of x
For centuries, people have hunted for the secret knowledge that:
$(x)' = \ldots = [\text{top secret}] = \ldots =$
$= 1.000$
6 step: Finding a derivation of $x \cdot y$
It's really easy to find:
$(x \cdot y)' = \ldots = [\text{top secret}] = \ldots =$
$= y + x$
7 step: Finding a derivation of $\cos(x \cdot y)$
It's simple as fuck:
$(\cos(x \cdot y))' = \ldots = [\text{top secret}] = \ldots =$
$= (-1.000) \cdot \sin(x \cdot y) \cdot (y + x)$
8 step: Finding a derivation of $\cos(x \cdot y) \cdot (y + x)$
thanks to the results of my colleagues' scientific work, I know that:
$(\cos(x \cdot y) \cdot (y + x))' = \ldots = [\text{top secret}] = \ldots =$
$= (-1.000) \cdot \sin(x \cdot y) \cdot (y + x) \cdot (y + x) + 2.000 \cdot \cos(x \cdot y)$
9 step: Finding a derivation of y
When I was child, my father always told me: "Remember, son:
$(y)' = \ldots = [\text{top secret}] = \ldots =$
$= 1.000$
10 step: Finding a derivation of x
It's really easy to find:
$(x)' = \ldots = [\text{top secret}] = \ldots =$
$= 1.000$
11 step: Finding a derivation of $x \cdot y$
I was asked not to tell anyone that:
$(x \cdot y)' = \ldots = [\text{top secret}] = \ldots =$
$= y + x$
12 step: Finding a derivation of $\sin(x \cdot y)$
For centuries, people have hunted for the secret knowledge that:
$(\sin(x \cdot y))' = \ldots = [\text{top secret}] = \ldots =$
$= \cos(x \cdot y) \cdot (y + x)$
13 step: Finding a derivation of $(\sin(x \cdot y))^{2.000}$
My roommate mumbled it in his sleep all night:
$((\sin(x \cdot y))^{2.000})' = \ldots = [\text{top secret}] = \ldots =$
$= 2.000 \cdot \sin(x \cdot y) \cdot \cos(x \cdot y) \cdot (y + x)$
14 step: Finding a derivation of 3.000
What if:
$(3.000)' = \ldots = [\text{top secret}] = \ldots =$
$= 0.000$
15 step: Finding a derivation of $3.000 \cdot (\sin(x \cdot y))^{2.000}$
Even my two-aged sister knows that:
$(3.000 \cdot (\sin(x \cdot y))^{2.000})' = \ldots = [\text{top secret}] = \ldots =$
$= 3.000 \cdot 2.000 \cdot \sin(x \cdot y) \cdot \cos(x \cdot y) \cdot (y + x)$
16 step: Finding a derivation of $3.000 \cdot (\sin(x \cdot y))^{2.000} \cdot \cos(x \cdot y) \cdot (y + x)$
I spend the hole of my life to find the answer and finally it's:
$(3.000 \cdot (\sin(x \cdot y))^{2.000} \cdot \cos(x \cdot y) \cdot (y + x))' = \ldots = [\text{top secret}] = \ldots =$
$= 3.000 \cdot 2.000 \cdot \sin(x \cdot y) \cdot \cos(x \cdot y) \cdot (y + x) \cdot \cos(x \cdot y) \cdot (y + x) + ((-1.000) \cdot \sin(x \cdot y) \cdot (y + x) \cdot (y + x) + 2.000 \cdot \cos(x \cdot y)) \cdot 3.000 \cdot (\sin(x \cdot y))^{2.000}$
Let's find **the 3 derivation** of the expression:
1 step: Finding a derivation of y
Even my two-aged sister knows that:
$(y)' = \ldots = [\text{top secret}] = \ldots =$
$= 1.000$
2 step: Finding a derivation of x
While preparing for exams, I learned a lot of new things, for example:
$(x)' = \ldots = [\text{top secret}] = \ldots =$
$= 1.000$
3 step: Finding a derivation of $x \cdot y$
When I was child, my father always told me: "Remember, son:
$(x \cdot y)' = \ldots = [\text{top secret}] = \ldots =$
$= y + x$
4 step: Finding a derivation of $\sin(x \cdot y)$
Sounds logical that it is the same as:
$(\sin(x \cdot y))' = \ldots = [\text{top secret}] = \ldots =$
$= \cos(x \cdot y) \cdot (y + x)$
5 step: Finding a derivation of $(\sin(x \cdot y))^{2.000}$
A true prince must know that:
$((\sin(x \cdot y))^{2.000})' = \ldots = [\text{top secret}] = \ldots =$
$= 2.000 \cdot \sin(x \cdot y) \cdot \cos(x \cdot y) \cdot (y + x)$
6 step: Finding a derivation of 3.000
My roommate mumbled it in his sleep all night:
$(3.000)' = \ldots = [\text{top secret}] = \ldots =$
$= 0.000$
7 step: Finding a derivation of $3.000 \cdot (\sin(x \cdot y))^{2.000}$
My roommate mumbled it in his sleep all night:
$(3.000 \cdot (\sin(x \cdot y))^{2.000})' = \ldots = [\text{top secret}] = \ldots =$
$= 3.000 \cdot 2.000 \cdot \sin(x \cdot y) \cdot \cos(x \cdot y) \cdot (y + x)$
8 step: Finding a derivation of y

If someone asked me that in the middle of the night, I wouldn't hesitate to say:
$(y)' = \ldots = [\text{top secret}] = \ldots =$
$= 1.000$
9 step: Finding a derivation of x
A true prince must know that:
$(x)' = \ldots = [\text{top secret}] = \ldots =$
$= 1.000$
10 step: Finding a derivation of $x \cdot y$
My roommate mumbled it in his sleep all night:
$(x \cdot y)' = \ldots = [\text{top secret}] = \ldots =$
$= y + x$
11 step: Finding a derivation of $\cos(x \cdot y)$
While preparing for exams, I learned a lot of new things, for example:
$(\cos(x \cdot y))' = \ldots = [\text{top secret}] = \ldots =$
$= (-1.000) \cdot \sin(x \cdot y) \cdot (y + x)$
12 step: Finding a derivation of 2.000
It's really easy to find:
$(2.000)' = \ldots = [\text{top secret}] = \ldots =$
$= 0.000$
13 step: Finding a derivation of $2.000 \cdot \cos(x \cdot y)$
It's really easy to find:
$(2.000 \cdot \cos(x \cdot y))' = \ldots = [\text{top secret}] = \ldots =$
$= 2.000 \cdot (-1.000) \cdot \sin(x \cdot y) \cdot (y + x)$
14 step: Finding a derivation of x
When I was child, my father always told me: "Remember, son:
$(x)' = \ldots = [\text{top secret}] = \ldots =$
$= 1.000$
15 step: Finding a derivation of y
What if:
$(y)' = \ldots = [\text{top secret}] = \ldots =$
$= 1.000$
16 step: Finding a derivation of $y + x$
If someone asked me that in the middle of the night, I wouldn't hesitate to say:
$(y + x)' = \ldots = [\text{top secret}] = \ldots =$
$= 2.000$
17 step: Finding a derivation of x
thanks to the results of my colleagues' scientific work, I know that:
$(x)' = \ldots = [\text{top secret}] = \ldots =$
$= 1.000$
18 step: Finding a derivation of y
A true prince must know that:
$(y)' = \ldots = [\text{top secret}] = \ldots =$
$= 1.000$
19 step: Finding a derivation of $y + x$
A true prince must know that:
$(y + x)' = \ldots = [\text{top secret}] = \ldots =$
$= 2.000$
20 step: Finding a derivation of y
When I was child, my father always told me: "Remember, son:
$(y)' = \ldots = [\text{top secret}] = \ldots =$
$= 1.000$
21 step: Finding a derivation of x
For centuries, people have hunted for the secret knowledge that:
$(x)' = \ldots = [\text{top secret}] = \ldots =$
$= 1.000$
22 step: Finding a derivation of $x \cdot y$
A true prince must know that:
$(x \cdot y)' = \ldots = [\text{top secret}] = \ldots =$
$= y + x$
23 step: Finding a derivation of $\sin(x \cdot y)$
I spend the hole of my life to find the answer and finally it's:
$(\sin(x \cdot y))' = \ldots = [\text{top secret}] = \ldots =$
$= \cos(x \cdot y) \cdot (y + x)$
24 step: Finding a derivation of -1.000
It's simple as fuck:
$(-1.000)' = \ldots = [\text{top secret}] = \ldots =$
$= 0.000$
25 step: Finding a derivation of $(-1.000) \cdot \sin(x \cdot y)$
For centuries, people have hunted for the secret knowledge that:
$((-1.000) \cdot \sin(x \cdot y))' = \ldots = [\text{top secret}] = \ldots =$
$= (-1.000) \cdot \cos(x \cdot y) \cdot (y + x)$
26 step: Finding a derivation of $(-1.000) \cdot \sin(x \cdot y) \cdot (y + x)$
It's really easy to find:
$((-1.000) \cdot \sin(x \cdot y) \cdot (y + x))' = \ldots = [\text{top secret}] = \ldots =$
$= (-1.000) \cdot \cos(x \cdot y) \cdot (y + x) \cdot (y + x) + 2.000 \cdot (-1.000) \cdot \sin(x \cdot y)$
27 step: Finding a derivation of $(-1.000) \cdot \sin(x \cdot y) \cdot (y + x) \cdot (y + x)$
It's really easy to find:

$((-1.000) \cdot \sin(x \cdot y) \cdot (y + x) \cdot (y + x))' = \ldots = [\text{top secret}] = \ldots =$
$= ((-1.000) \cdot \cos(x \cdot y) \cdot (y + x) \cdot (y + x) + 2.000 \cdot (-1.000) \cdot \sin(x \cdot y)) \cdot (y + x) + 2.000 \cdot (-1.000) \cdot \sin(x \cdot y) \cdot (y + x)$
`28 step:` Finding a derivation of $(-1.000) \cdot \sin(x \cdot y) \cdot (y + x) \cdot (y + x) + 2.000 \cdot \cos(x \cdot y)$
I spend the hole of my life to find the answer and finally it's:
$((-1.000) \cdot \sin(x \cdot y) \cdot (y + x) \cdot (y + x) + 2.000 \cdot \cos(x \cdot y))' = \ldots = [\text{top secret}] = \ldots =$
$= ((-1.000) \cdot \cos(x \cdot y) \cdot (y + x) \cdot (y + x) + 2.000 \cdot (-1.000) \cdot \sin(x \cdot y)) \cdot (y + x) + 2.000 \cdot (-1.000) \cdot \sin(x \cdot y) \cdot (y + x) + 2.000 \cdot (-1.000) \cdot \sin(x \cdot y) \cdot (y + x)$
`29 step:` Finding a derivation of $(((-1.000) \cdot \sin(x \cdot y) \cdot (y + x) \cdot (y + x) + 2.000 \cdot \cos(x \cdot y)) \cdot 3.000 \cdot (\sin(x \cdot y))^{2.000}$
I was asked not to tell anyone that:
$(((-1.000) \cdot \sin(x \cdot y) \cdot (y + x) \cdot (y + x) + 2.000 \cdot \cos(x \cdot y)) \cdot 3.000 \cdot (\sin(x \cdot y))^{2.000})' = \ldots = [\text{top secret}] = \ldots =$
$= (((-1.000) \cdot \cos(x \cdot y) \cdot (y + x) \cdot (y + x) + 2.000 \cdot (-1.000) \cdot \sin(x \cdot y)) \cdot (y + x) + 2.000 \cdot (-1.000) \cdot \sin(x \cdot y) \cdot (y + x)) \cdot 3.000 \cdot (\sin(x \cdot y))^{2.000} + 3.000 \cdot 2.000 \cdot \sin(x \cdot y) \cdot \cos(x \cdot y) \cdot (y + x) \cdot ((-1.000) \cdot \sin(x \cdot y) \cdot (y + x) \cdot (y + x) + 2.000 \cdot \cos(x \cdot y))$
`30 step:` Finding a derivation of x
If someone asked me that in the middle of the night, I wouldn't hesitate to say:
$(x)' = \ldots = [\text{top secret}] = \ldots =$
$= 1.000$
`31 step:` Finding a derivation of y
Even my two-aged sister knows that:
$(y)' = \ldots = [\text{top secret}] = \ldots =$
$= 1.000$
`32 step:` Finding a derivation of $y + x$
I spend the hole of my life to find the answer and finally it's:
$(y + x)' = \ldots = [\text{top secret}] = \ldots =$
$= 2.000$
`33 step:` Finding a derivation of y
It's really easy to find:
$(y)' = \ldots = [\text{top secret}] = \ldots =$
$= 1.000$
`34 step:` Finding a derivation of x
It's really easy to find:
$(x)' = \ldots = [\text{top secret}] = \ldots =$
$= 1.000$
`35 step:` Finding a derivation of $x \cdot y$
It's simple as fuck:
$(x \cdot y)' = \ldots = [\text{top secret}] = \ldots =$
$= y + x$
`36 step:` Finding a derivation of $\cos(x \cdot y)$
It's simple as fuck:
$(\cos(x \cdot y))' = \ldots = [\text{top secret}] = \ldots =$
$= (-1.000) \cdot \sin(x \cdot y) \cdot (y + x)$
`37 step:` Finding a derivation of $\cos(x \cdot y) \cdot (y + x)$
A true prince must know that:
$(\cos(x \cdot y) \cdot (y + x))' = \ldots = [\text{top secret}] = \ldots =$
$= (-1.000) \cdot \sin(x \cdot y) \cdot (y + x) \cdot (y + x) + 2.000 \cdot \cos(x \cdot y)$
`38 step:` Finding a derivation of x
My roommate mumbled it in his sleep all night:
$(x)' = \ldots = [\text{top secret}] = \ldots =$
$= 1.000$
`39 step:` Finding a derivation of y
I was asked not to tell anyone that:
$(y)' = \ldots = [\text{top secret}] = \ldots =$
$= 1.000$
`40 step:` Finding a derivation of $y + x$
I spend the hole of my life to find the answer and finally it's:
$(y + x)' = \ldots = [\text{top secret}] = \ldots =$
$= 2.000$
`41 step:` Finding a derivation of y
It's really easy to find:
$(y)' = \ldots = [\text{top secret}] = \ldots =$
$= 1.000$
`42 step:` Finding a derivation of x
What if:
$(x)' = \ldots = [\text{top secret}] = \ldots =$
$= 1.000$
`43 step:` Finding a derivation of $x \cdot y$
While preparing for exams, I learned a lot of new things, for example:
$(x \cdot y)' = \ldots = [\text{top secret}] = \ldots =$
$= y + x$
`44 step:` Finding a derivation of $\cos(x \cdot y)$
Even my two-aged sister knows that:
$(\cos(x \cdot y))' = \ldots = [\text{top secret}] = \ldots =$
$= (-1.000) \cdot \sin(x \cdot y) \cdot (y + x)$
`45 step:` Finding a derivation of $\cos(x \cdot y) \cdot (y + x)$
What if:
$(\cos(x \cdot y) \cdot (y + x))' = \ldots = [\text{top secret}] = \ldots =$
$= (-1.000) \cdot \sin(x \cdot y) \cdot (y + x) \cdot (y + x) + 2.000 \cdot \cos(x \cdot y)$
`46 step:` Finding a derivation of y
It's simple as fuck:
$(y)' = \ldots = [\text{top secret}] = \ldots =$
$= 1.000$

47 step: Finding a derivation of x
My roommate mumbled it in his sleep all night:
$(x)' = \ldots = [\text{top secret}] = \ldots =$
$= 1.000$
48 step: Finding a derivation of $x \cdot y$
It's simple as fuck:
$(x \cdot y)' = \ldots = [\text{top secret}] = \ldots =$
$= y + x$
49 step: Finding a derivation of $\sin(x \cdot y)$
A true prince must know that:
$(\sin(x \cdot y))' = \ldots = [\text{top secret}] = \ldots =$
$= \cos(x \cdot y) \cdot (y + x)$
50 step: Finding a derivation of 2.000
My roommate mumbled it in his sleep all night:
$(2.000)' = \ldots = [\text{top secret}] = \ldots =$
$= 0.000$
51 step: Finding a derivation of $2.000 \cdot \sin(x \cdot y)$
A true prince must know that:
$(2.000 \cdot \sin(x \cdot y))' = \ldots = [\text{top secret}] = \ldots =$
$= 2.000 \cdot \cos(x \cdot y) \cdot (y + x)$
52 step: Finding a derivation of $2.000 \cdot \sin(x \cdot y) \cdot \cos(x \cdot y) \cdot (y + x)$
A true prince must know that:
$(2.000 \cdot \sin(x \cdot y) \cdot \cos(x \cdot y) \cdot (y + x))' = \ldots = [\text{top secret}] = \ldots =$
$= 2.000 \cdot \cos(x \cdot y) \cdot (y + x) \cdot \cos(x \cdot y) \cdot (y + x) + ((-1.000) \cdot \sin(x \cdot y) \cdot (y + x) \cdot (y + x) + 2.000 \cdot \cos(x \cdot y)) \cdot 2.000 \cdot \sin(x \cdot y)$
53 step: Finding a derivation of 3.000
If someone asked me that in the middle of the night, I wouldn't hesitate to say:
$(3.000)' = \ldots = [\text{top secret}] = \ldots =$
$= 0.000$
54 step: Finding a derivation of $3.000 \cdot 2.000 \cdot \sin(x \cdot y) \cdot \cos(x \cdot y) \cdot (y + x)$
I spend the hole of my life to find the answer and finally it's:
$(3.000 \cdot 2.000 \cdot \sin(x \cdot y) \cdot \cos(x \cdot y) \cdot (y + x))' = \ldots = [\text{top secret}] = \ldots =$
$= 3.000 \cdot (2.000 \cdot \cos(x \cdot y) \cdot (y + x) \cdot \cos(x \cdot y) \cdot (y + x) + ((-1.000) \cdot \sin(x \cdot y) \cdot (y + x) \cdot (y + x) + 2.000 \cdot \cos(x \cdot y)) \cdot 2.000 \cdot \sin(x \cdot y)) \cdot \cos(x \cdot y) \cdot (y + x) + ((-1.000) \cdot \sin(x \cdot y) \cdot (y + x) \cdot (y + x) + 2.000 \cdot \cos(x \cdot y)) \cdot 3.000 \cdot 2.000 \cdot \sin(x \cdot y) \cdot \cos(x \cdot y) \cdot (y + x)$
55 step: Finding a derivation of $3.000 \cdot 2.000 \cdot \sin(x \cdot y) \cdot \cos(x \cdot y) \cdot (y + x) \cdot \cos(x \cdot y) \cdot (y + x)$
When I was child, my father always told me: "Remember, son:
$(3.000 \cdot 2.000 \cdot \sin(x \cdot y) \cdot \cos(x \cdot y) \cdot (y + x) \cdot \cos(x \cdot y) \cdot (y + x))' = \ldots = [\text{top secret}] = \ldots =$
$= 3.000 \cdot (2.000 \cdot \cos(x \cdot y) \cdot (y + x) \cdot \cos(x \cdot y) \cdot (y + x) + ((-1.000) \cdot \sin(x \cdot y) \cdot (y + x) \cdot (y + x) + 2.000 \cdot \cos(x \cdot y)) \cdot 2.000 \cdot \sin(x \cdot y)) \cdot \cos(x \cdot y) \cdot (y + x) + ((-1.000) \cdot \sin(x \cdot y) \cdot (y + x) \cdot (y + x) + 2.000 \cdot \cos(x \cdot y)) \cdot 3.000 \cdot 2.000 \cdot \sin(x \cdot y) \cdot \cos(x \cdot y) \cdot (y + x)$
56 step: Finding a derivation of $3.000 \cdot 2.000 \cdot \sin(x \cdot y) \cdot \cos(x \cdot y) \cdot (y + x) \cdot \cos(x \cdot y) \cdot (y + x) + ((-1.000) \cdot \sin(x \cdot y) \cdot (y + x) \cdot (y + x) + 2.000 \cdot \cos(x \cdot y)) \cdot 3.000 \cdot (\sin(x \cdot y))^{2.000}$
If someone asked me that in the middle of the night, I wouldn't hesitate to say:
$(3.000 \cdot 2.000 \cdot \sin(x \cdot y) \cdot \cos(x \cdot y) \cdot (y + x) \cdot \cos(x \cdot y) \cdot (y + x) + ((-1.000) \cdot \sin(x \cdot y) \cdot (y + x) + 2.000 \cdot \cos(x \cdot y)) \cdot 3.000 \cdot (\sin(x \cdot y))^{2.000})' = \ldots = [\text{top secret}] = \ldots =$
$= 3.000 \cdot (2.000 \cdot \cos(x \cdot y) \cdot (y + x) \cdot \cos(x \cdot y) \cdot (y + x) + ((-1.000) \cdot \sin(x \cdot y) \cdot (y + x) \cdot (y + x) + 2.000 \cdot \cos(x \cdot y)) \cdot 2.000 \cdot \sin(x \cdot y)) \cdot \cos(x \cdot y) \cdot (y + x) + ((-1.000) \cdot \sin(x \cdot y) \cdot (y + x) \cdot (y + x) + 2.000 \cdot \cos(x \cdot y)) \cdot 3.000 \cdot 2.000 \cdot \sin(x \cdot y) \cdot \cos(x \cdot y) \cdot (y + x) + (((-1.000) \cdot \cos(x \cdot y) \cdot (y + x) \cdot (y + x) + 2.000 \cdot (-1.000) \cdot \sin(x \cdot y)) \cdot (y + x) + 2.000 \cdot (-1.000) \cdot \sin(x \cdot y) \cdot (y + x) + 2.000 \cdot (-1.000) \cdot \sin(x \cdot y) \cdot (y + x)) \cdot 3.000 \cdot (\sin(x \cdot y))^{2.000} + 3.000 \cdot 2.000 \cdot \sin(x \cdot y) \cdot \cos(x \cdot y) \cdot (y + x) \cdot ((-1.000) \cdot \sin(x \cdot y) \cdot (y + x) \cdot (y + x) + 2.000 \cdot \cos(x \cdot y))$
Finally... The 3 derivation of the expression:
$f^{(3)}(x, y) = 3.000 \cdot (2.000 \cdot \cos(x \cdot y) \cdot (y + x) \cdot \cos(x \cdot y) \cdot (y + x) + ((-1.000) \cdot \sin(x \cdot y) \cdot (y + x) \cdot (y + x) + 2.000 \cdot \cos(x \cdot y)) \cdot 2.000 \cdot \sin(x \cdot y)) \cdot \cos(x \cdot y) \cdot (y + x) + ((-1.000) \cdot \sin(x \cdot y) \cdot (y + x) \cdot (y + x) + 2.000 \cdot \cos(x \cdot y)) \cdot 3.000 \cdot 2.000 \cdot \sin(x \cdot y) \cdot \cos(x \cdot y) \cdot (y + x) + (((((-1.000) \cdot \cos(x \cdot y) \cdot (y + x) \cdot (y + x) + 2.000 \cdot (-1.000) \cdot \sin(x \cdot y)) \cdot (y + x) + 2.000 \cdot (-1.000) \cdot \sin(x \cdot y) \cdot (y + x) + 2.000 \cdot (-1.000) \cdot \sin(x \cdot y) \cdot (y + x)) \cdot 3.000 \cdot (\sin(x \cdot y))^{2.000} + 3.000 \cdot 2.000 \cdot \sin(x \cdot y) \cdot \cos(x \cdot y) \cdot (y + x) \cdot ((-1.000) \cdot \sin(x \cdot y) \cdot (y + x) \cdot (y + x) + 2.000 \cdot \cos(x \cdot y))$
BRITISH SCIENTISTS WERE SHOCKED AGAIN, WHEN THEY COUNT THE 3 DERIVATION OF THIS EXPRESSION!!!
In the point $M_0(x_0, y_0) = (3.142,\ 2.000)$ it's value $= 815.45956$

Finding partical derivations Partial derivation of the expression on the variable x:
$\frac{\partial f}{\partial x} = 3.000 \cdot (\sin(2.000 \cdot x))^{2.000} \cdot 2.000 \cdot \cos(2.000 \cdot x)$
In the point $M_0(x_0, y_0) = (3.142,\ 2.000)$ it's value $= 0.00000$!!!
Partial derivation of the expression on the variable y:
$\frac{\partial f}{\partial y} = 3.000 \cdot (\sin(3.142 \cdot y))^{2.000} \cdot 3.142 \cdot \cos(3.142 \cdot y)$
In the point $M_0(x_0, y_0) = (3.142,\ 2.000)$ it's value $= 0.00000$!!!

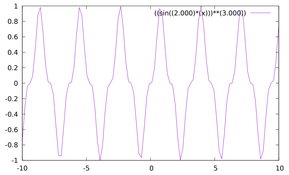
Finding full derivation Full derivation:
$\sqrt{(3.000 \cdot (\sin(2.000 \cdot x))^{2.000} \cdot 2.000 \cdot \cos(2.000 \cdot x))^{2.000} + (3.000 \cdot (\sin(3.142 \cdot y))^{2.000} \cdot 3.142 \cdot \cos(3.142 \cdot y))^{2.000}}$
In the point $M_0(x_0, y_0) = (3.142,\ 2.000)$ it's value $= 0.00000$!!!

3 Exploration the expression as a function of the first variable

Now let's consider the expression as a function of x variable: $f(x) = (\sin(2.000 \cdot x))^{3.000}$

Decomposing on Macloren's formula **Maklorens formula for** $x \to x_0 = 3.142$:
$f(x) = (-0.000) + 0.000 \cdot (x - 3.142) + (-0.002) \cdot (x - 3.142)^{2.000} + 8.000 \cdot (x - 3.142)^{3.000} + 0.007 \cdot (x - 3.142)^{4.000} + o((x - 3.142)^{4.000})$

Graphics **Graph** $f(x) = (\sin(2.000 \cdot x))^{3.000}$ on the diapasone $x \in [-10 : 10]$:



Equations in the point **Tangent equation** in the point $x_0 = 1.000$:

f(x) = $(-2.064) \cdot (x - 1.000) + 0.752$

Normal equation in the point $x_0 = 1.000$:

f(x) = $0.484 \cdot (x - 1.000) + 0.752$