

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

= 1.000
2 step: Finding a derivation of x
It's really easy to find:
 $(x)' = \dots = [\text{top secret}] = \dots =$

= 1.000
3 step: Finding a derivation of $x \cdot y$
My roommate mumbled it in his sleep all night:
 $(x \cdot y)' = \dots = [\text{top secret}] = \dots =$

= $y + x$
4 step: Finding a derivation of $\sin x \cdot y$
Sounds logical that it is the same as:
 $(\sin x \cdot y)' = \dots = [\text{top secret}] = \dots =$

= $\cos x \cdot y \cdot (y + x)$
5 step: Finding a derivation of $(\sin x \cdot y)^{3.000}$
For centuries, people have hunted for the secret knowledge that:

$((\sin x \cdot y)^{3.000})' = \dots = [\text{top secret}] = \dots =$
= $3.000 \cdot (\sin x \cdot y)^{2.000} \cdot \cos x \cdot y \cdot (y + x)$

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

= 1.000
2 step: Finding a derivation of x
It's really easy to find:
 $(x)' = \dots = [\text{top secret}] = \dots =$

= 1.000
3 step: Finding a derivation of $x \cdot y$
My roommate mumbled it in his sleep all night:
 $(x \cdot y)' = \dots = [\text{top secret}] = \dots =$

= $y + x$
4 step: Finding a derivation of $\sin x \cdot y$
What if:
 $(\sin x \cdot y)' = \dots = [\text{top secret}] = \dots =$

= $\cos x \cdot y \cdot (y + x)$
5 step: Finding a derivation of $(\sin x \cdot y)^{3.000}$
It's really easy to find:
 $((\sin x \cdot y)^{3.000})' = \dots = [\text{top secret}] = \dots =$

= $3.000 \cdot (\sin x \cdot y)^{2.000} \cdot \cos x \cdot y \cdot (y + x)$
Let's find the 2 derivation of the expression:

1 step: Finding a derivation of x
Even my two-aged sister knows that:
 $(x)' = \dots = [\text{top secret}] = \dots =$

= 1.000
2 step: Finding a derivation of y
When I was child, my father always told me: "Remember, son:
 $(y)' = \dots = [\text{top secret}] = \dots =$

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

= 2.000
4 step: Finding a derivation of y
Man... Just look:
 $(y)' = \dots = [\text{top secret}] = \dots =$

= 1.000

5 step: Finding a derivation of x
For centuries, people have hunted for the secret knowledge that:
 $(x)' = \dots = [\text{top secret}] = \dots =$
= 1.000

6 step: Finding a derivation of $x \cdot y$
It's really easy to find:
 $(x \cdot y)' = \dots = [\text{top secret}] = \dots =$
= $y + x$

7 step: Finding a derivation of $\cos x \cdot y$
It's simple as fuck:
 $(\cos x \cdot y)' = \dots = [\text{top secret}] = \dots =$
= $(-1.000) \cdot \sin x \cdot y \cdot (y + x)$

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:
 $(\cos x \cdot y \cdot (y + x))' = \dots = [\text{top secret}] = \dots =$
= $(-1.000) \cdot \sin x \cdot y \cdot (y + x) \cdot (y + x) + 2.000 \cdot \cos x \cdot y$

9 step: Finding a derivation of y
When I was child, my father always told me: "Remember, son:
 $(y)' = \dots = [\text{top secret}] = \dots =$
= 1.000

10 step: Finding a derivation of x
It's really easy to find:
 $(x)' = \dots = [\text{top secret}] = \dots =$
= 1.000

11 step: Finding a derivation of $x \cdot y$
I was asked not to tell anyone that:
 $(x \cdot y)' = \dots = [\text{top secret}] = \dots =$
= $y + x$

12 step: Finding a derivation of $\sin x \cdot y$
For centuries, people have hunted for the secret knowledge that:
 $(\sin x \cdot y)' = \dots = [\text{top secret}] = \dots =$
= $\cos x \cdot y \cdot (y + x)$

13 step: Finding a derivation of $(\sin x \cdot y)^{2.000}$
My roommate mumbled it in his sleep all night:
 $((\sin x \cdot y)^{2.000})' = \dots = [\text{top secret}] = \dots =$
= $2.000 \cdot \sin x \cdot y \cdot \cos x \cdot y \cdot (y + x)$

14 step: Finding a derivation of 3.000
What if:
 $(3.000)' = \dots = [\text{top secret}] = \dots =$
= 0.000

15 step: Finding a derivation of $3.000 \cdot (\sin x \cdot y)^{2.000}$
Even my two-aged sister knows that:
 $(3.000 \cdot (\sin x \cdot y)^{2.000})' = \dots = [\text{top secret}] = \dots =$
= $3.000 \cdot 2.000 \cdot \sin x \cdot y \cdot \cos x \cdot y \cdot (y + x)$

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:
 $(3.000 \cdot (\sin x \cdot y)^{2.000} \cdot \cos x \cdot y \cdot (y + x))' = \dots = [\text{top secret}] = \dots =$
= $3.000 \cdot 2.000 \cdot \sin x \cdot y \cdot \cos x \cdot y \cdot (y + x) \cdot \cos x \cdot y \cdot (y + x) + ((-1.000) \cdot \sin x \cdot y \cdot (y + x) \cdot (y + x) + 2.000 \cdot \cos x \cdot y) \cdot 3.000 \cdot (\sin x \cdot y)^{2.000}$
Let's find **the 3 derivation** of the expression:

1 step: Finding a derivation of y
Even my two-aged sister knows that:
 $(y)' = \dots = [\text{top secret}] = \dots =$
= 1.000

2 step: Finding a derivation of x
While preparing for exams, I learned a lot of new things, for example:
 $(x)' = \dots = [\text{top secret}] = \dots =$
= 1.000

3 step: Finding a derivation of $x \cdot y$
When I was child, my father always told me: "Remember, son:
 $(x \cdot y)' = \dots = [\text{top secret}] = \dots =$
= $y + x$

4 step: Finding a derivation of $\sin x \cdot y$
Sounds logical that it is the same as:
 $(\sin x \cdot y)' = \dots = [\text{top secret}] = \dots =$
= $\cos x \cdot y \cdot (y + x)$

5 step: Finding a derivation of $(\sin x \cdot y)^{2.000}$
A true prince must know that:
 $((\sin x \cdot y)^{2.000})' = \dots = [\text{top secret}] = \dots =$
= $2.000 \cdot \sin x \cdot y \cdot \cos x \cdot y \cdot (y + x)$

6 step: Finding a derivation of 3.000
My roommate mumbled it in his sleep all night:
 $(3.000)' = \dots = [\text{top secret}] = \dots =$
= 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:
 $(3.000 \cdot (\sin x \cdot y)^{2.000})' = \dots = [\text{top secret}] = \dots =$
= $3.000 \cdot 2.000 \cdot \sin x \cdot y \cdot \cos x \cdot y \cdot (y + x)$

8 step: Finding a derivation of y

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

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

47 **step**: Finding a derivation of x
My roommate mumbled it in his sleep all night:
 $(x)' = \dots = [\text{top secret}] = \dots =$
 $= 1.000$
48 **step**: Finding a derivation of $x \cdot y$
It's simple as fuck:
 $(x \cdot y)' = \dots = [\text{top secret}] = \dots =$
 $= y + x$
49 **step**: Finding a derivation of $\sin x \cdot y$
A true prince must know that:
 $(\sin x \cdot y)' = \dots = [\text{top secret}] = \dots =$
 $= \cos x \cdot y \cdot (y + x)$
50 **step**: Finding a derivation of 2.000
My roommate mumbled it in his sleep all night:
 $(2.000)' = \dots = [\text{top secret}] = \dots =$
 $= 0.000$
51 **step**: Finding a derivation of $2.000 \cdot \sin x \cdot y$
A true prince must know that:
 $(2.000 \cdot \sin x \cdot y)' = \dots = [\text{top secret}] = \dots =$
 $= 2.000 \cdot \cos x \cdot y \cdot (y + x)$
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:
 $(2.000 \cdot \sin x \cdot y \cdot \cos x \cdot y \cdot (y + x))' = \dots = [\text{top secret}] = \dots =$
 $= 2.000 \cdot \cos x \cdot y \cdot (y + x) \cdot \cos x \cdot y \cdot (y + x) + ((-1.000) \cdot \sin x \cdot y \cdot (y + x) \cdot (y + x) + 2.000 \cdot \cos x \cdot y) \cdot 2.000 \cdot \sin x \cdot y$
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:
 $(3.000)' = \dots = [\text{top secret}] = \dots =$
 $= 0.000$
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:
 $(3.000 \cdot 2.000 \cdot \sin x \cdot y \cdot \cos x \cdot y \cdot (y + x))' = \dots = [\text{top secret}] = \dots =$
 $= 3.000 \cdot (2.000 \cdot \cos x \cdot y \cdot (y + x) \cdot \cos x \cdot y \cdot (y + x) + ((-1.000) \cdot \sin x \cdot y \cdot (y + x) \cdot (y + x) + 2.000 \cdot \cos x \cdot y) \cdot 2.000 \cdot \sin x \cdot y)$
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:
 $(3.000 \cdot 2.000 \cdot \sin x \cdot y \cdot \cos x \cdot y \cdot (y + x) \cdot \cos x \cdot y \cdot (y + x))' = \dots = [\text{top secret}] = \dots =$
 $= 3.000 \cdot (2.000 \cdot \cos x \cdot y \cdot (y + x) \cdot \cos x \cdot y \cdot (y + x) + ((-1.000) \cdot \sin x \cdot y \cdot (y + x) \cdot (y + x) + 2.000 \cdot \cos x \cdot y) \cdot 2.000 \cdot \sin x \cdot y) \cdot \cos x \cdot y \cdot (y + x) + ((-1.000) \cdot \sin x \cdot y \cdot (y + x) \cdot (y + x) + 2.000 \cdot \cos x \cdot y) \cdot 3.000 \cdot 2.000 \cdot \sin x \cdot y \cdot \cos x \cdot y \cdot (y + x)$
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:
 $(3.000 \cdot 2.000 \cdot \sin x \cdot y \cdot \cos x \cdot y \cdot (y + x) \cdot \cos x \cdot y \cdot (y + x) + ((-1.000) \cdot \sin x \cdot y \cdot (y + x) \cdot (y + x) + 2.000 \cdot \cos x \cdot y) \cdot 3.000 \cdot (\sin x \cdot y)^{2.000})' = \dots = [\text{top secret}] = \dots =$
 $= 3.000 \cdot (2.000 \cdot \cos x \cdot y \cdot (y + x) \cdot \cos x \cdot y \cdot (y + x) + ((-1.000) \cdot \sin x \cdot y \cdot (y + x) \cdot (y + x) + 2.000 \cdot \cos x \cdot y) \cdot 2.000 \cdot \sin x \cdot y) \cdot \cos x \cdot y \cdot (y + x) + (((-1.000) \cdot \cos x \cdot y \cdot (y + x) \cdot (y + x) + 2.000 \cdot (-1.000) \cdot \sin x \cdot y \cdot (y + x) + 2.000 \cdot (-1.000) \cdot \sin x \cdot y \cdot (y + x) + 2.000 \cdot (-1.000) \cdot \sin x \cdot y \cdot (y + x)) \cdot 3.000 \cdot (\sin x \cdot y)^{2.000} + 3.000 \cdot 2.000 \cdot \sin x \cdot y \cdot \cos x \cdot y \cdot (y + x) \cdot ((-1.000) \cdot \sin x \cdot y \cdot (y + x) \cdot (y + x) + 2.000 \cdot \cos x \cdot y)$
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 partial 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 !!!

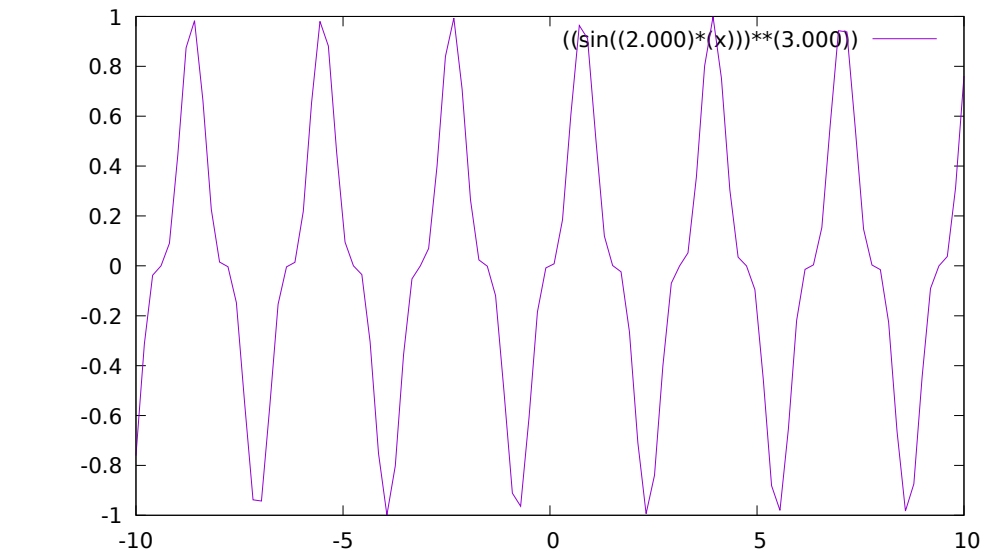
Finding full derivation Full derivation:
 $\sqrt{(3.000 \cdot (\sin 2.000 \cdot x)^{2.000} \cdot 2.000 \cdot \cos 2.000 \cdot x)^{2.000} + (3.000 \cdot (\sin 3.142 \cdot y)^{2.000} \cdot 3.142 \cdot \cos 3.142 \cdot y)^{2.000}}$
In the point $M_0(x_0, y_0) = (3.142, 2.000)$ it's value = 0.00000 !!!

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 $x \rightarrow x_0 = 3.142$:
 $f(x) = (-0.000) + 0.000 \cdot (x - 3.142) + (-0.002) \cdot (x - 3.142)^{2.000} + 8.000 \cdot (x - 3.142)^{3.000} + 0.007 \cdot (x - 3.142)^{4.000} + o((x - 3.142)^{4.000})$

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



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 $x_0 = 1.000$:

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

