$CrInGeCrInGeProduction.Supercringeintroductionhere$:

Let's calculate smth with a given function: f(x, y) = $x \cdot y^{2.000}$
Firstly, let's insert all constants and simplify this expression: f(x, y) = $x \cdot y^{2.000}$
BRITISH SCIENTISTS WERE SHOCKED, WHEN THEY COUNT IT!!!
In the point (x = 3.000, y = 2.000) it's value = 12.000
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:

$$y$$

While preparing for exams, I learned a lot of new things, for example: $(y)' = 1.000$
2 step. finding a derivation:

$$y^{2.000}$$

It's really easy to find: $(y^{2.000})' = 2.000 \cdot y$
3 step. finding a derivation:

$$x$$

My roommate mumbled it in his sleep all night: $(x)' = 1.000$
4 step. finding a derivation:

$$x \cdot y^{2.000}$$

Sounds logical that it is the same as: $(x \cdot y^{2.000})' = y^{2.000} + 2.000 \cdot y \cdot x$
Congratulations! The first derivation of the expression is:

$$y^{2.000} + 2.000 \cdot y \cdot x$$

In the point (x = 3.000, y = 2.000) it's value = 16.000
Let's calculate the 3 derivation of the expression:
Calculating the 1 derivation of the expression:
1 step. finding a derivation:

$$y$$

For centuries, people have hunted for the secret knowledge that: $(y)' = 1.000$
2 step. finding a derivation:

$$y^{2.000}$$

Sounds logical that it is the same as: $(y^{2.000})' = 2.000 \cdot y$
3 step. finding a derivation:

$$x$$

It's really easy to find: $(x)' = 1.000$
4 step. finding a derivation:

$$x \cdot y^{2.000}$$

My roommate mumbled it in his sleep all night: $(x \cdot y^{2.000})' = y^{2.000} + 2.000 \cdot y \cdot x$
Calculating the 2 derivation of the expression:
1 step. finding a derivation:

$$x$$

What if it equals: $(x)' = 1.000$
2 step. finding a derivation:

$$y$$

It's really easy to find: $(y)' = 1.000$
3 step. finding a derivation:

$$2.000$$

Even my two-aged sister knows that it equals: $(2.000)' = 0.000$
4 step. finding a derivation:

$$2.000 \cdot y$$

When I was child, my father always told me: "Remember, son: $(2.000 \cdot y)' = 2.000$
5 step. finding a derivation:

$$2.000 \cdot y \cdot x$$

I spend the hole of my life to find the answer and finally it's: $(2.000 \cdot y \cdot x)' = 2.000 \cdot x + 2.000 \cdot y$
6 step. finding a derivation:

$$y$$

Man... Just look: $(y)' = 1.000$
7 step. finding a derivation:

$$y^{2.000}$$

For centuries, people have hunted for the secret knowledge that: $(y^{2.000})' = 2.000 \cdot y$
8 step. finding a derivation:

$$y^{2.000} + 2.000 \cdot y \cdot x$$

It's really easy to find: $(y^{2.000} + 2.000 \cdot y \cdot x)' = 2.000 \cdot y + 2.000 \cdot x + 2.000 \cdot y$
Calculating the 3 derivation of the expression:
1 step. finding a derivation:

$$y$$

It's simple as fuck: $(y)' = 1.000$
2 step. finding a derivation:

$$2.000$$

thanks to the results of my colleagues' scientific work, I know that it equals: $(2.000)' = 0.000$
3 step. finding a derivation:

$$2.000 \cdot y$$

When I was child, my father always told me: "Remember, son: $(2.000 \cdot y)' = 2.000$
4 step. finding a derivation:

$$x$$

It's really easy to find: $(x)' = 1.000$
5 step. finding a derivation:

$$2.000$$

I was asked not to tell anyone that: $(2.000)' = 0.000$
6 step. finding a derivation:

$$2.000 \cdot x$$

For centuries, people have hunted for the secret knowledge that: $(2.000 \cdot x)' = 2.000$
7 step. finding a derivation:

$$2.000 \cdot x + 2.000 \cdot y$$

My roommate mumbled it in his sleep all night: $(2.000 \cdot x + 2.000 \cdot y)' = 4.000$
8 step. finding a derivation:

$$y$$

What if it equals: $(y)' = 1.000$
9 step. finding a derivation:

$$2.000$$

Even my two-aged sister knows that it equals: $(2.000)' = 0.000$
10 step. finding a derivation:

$$2.000 \cdot y$$

I spend the hole of my life to find the answer and finally it's: $(2.000 \cdot y)' = 2.000$
11 step. finding a derivation:

$$2.000 \cdot y + 2.000 \cdot x + 2.000 \cdot y$$

Even my two-aged sister knows that it equals: $(2.000 \cdot y + 2.000 \cdot x + 2.000 \cdot y)' = 6.000$
Finally... The 3 derivation of the expression:

$$6.000$$

BRITISH SCIENTISTS WERE SHOCKED AGAIN, WHEN THEY COUNT THE 3 DERIVATION OF THIS EXPRESSION!!!
In the point (x = 3.000, y = 2.000) it's value = 6.000
Partial derivation of the expression on the variable 'x':
$\frac{\partial f}{\partial x} = 4.000$
In the point (x = 3.000, y = 2.000) it's value = 4.000000 !!!
Partial derivation of the expression on the variable 'y':
$\frac{\partial f}{\partial y} = 3.000 \cdot 2.000 \cdot y$
In the point (x = 3.000, y = 2.000) it's value = 12.000000 !!!
Full derivation:

$$\sqrt{16.000 + (3.000 \cdot 2.000 \cdot y)^{2.000}}$$

In the point (x = 3.000, y = 2.000) it's value = 12.649 !!!
Let's consider the expression as a function of x variable: f(x) = $4.000 \cdot x$
Maklorens formula for $x \to 3.000$: f(x) = $12.000 + 4.000 \cdot (x - 3.000) + o((x - 3.000)^{4.000})$
Graph f(x):

Tangent equation in the point x = -2.000: f(x) = $4.000 \cdot (x - (-2.000)) + (-8.000)$
Normal equation in the point x = -2.000: f(x) = $(-0.250) \cdot (x - (-2.000)) + (-8.000)$