$CrInGeCrInGeProduction.Supercringeintroductionhere:$

Let's calculate smth with a given function: f(x, y) = $\sin x \cdot y^{2.000000000}$
Firstly, let's insert all constants and simplify this expression: f(x, y) = $\sin x \cdot y^{2.000000000}$
BRITISH SCIENTISTS WERE SHOCKED, WHEN THEY COUNT IT!!!
In the point $M_0(x_0,\, y_0) = (3.000000000,\, 2.000000000)$ **it's value** = 0.564480032
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)' = ... = $ [top secret] $= ... =$
$= 1.000000000$
2 step. finding a derivation of:
$y^{2.000000000}$
It's really easy to find:
$(y^{2.000000000})' = ... = $ [top secret] $= ... =$
$= 2.000000000 \cdot y$
3 step. finding a derivation of:
$x$
My roommate mumbled it in his sleep all night:
$(x)' = ... = $ [top secret] $= ... =$
$= 1.000000000$
4 step. finding a derivation of:
$\sin x$
Sounds logical that it is the same as:
$(\sin x)' = ... = $ [top secret] $= ... =$
$= \cos x$
5 step. finding a derivation of:
$\sin x \cdot y^{2.000000000}$
For centuries, people have hunted for the secret knowledge that:
$(\sin x \cdot y^{2.000000000})' = ... = $ [top secret] $= ... =$
$= \cos x \cdot y^{2.000000000} + 2.000000000 \cdot y \cdot \sin x$
Congratulations! **The first derivation of the expression** is:
$\cos x \cdot y^{2.000000000} + 2.000000000 \cdot y \cdot \sin x$In the point $M_0(x_0,\, y_0) = (3.000000000,\, 2.000000000)$ it's value = -3.395489954
**Let's calculate the 0 derivation of the expression:**
**Finally... The 0 derivation of the expression:**
$\sin x \cdot y^{2.000000000}$
BRITISH SCIENTISTS WERE SHOCKED AGAIN, WHEN THEY COUNT THE 0 DERIVATION OF THIS EXPRESSION!!!
In the point $M_0(x_0,\, y_0) = (3.000000000,\, 2.000000000)$ it's value = 0.564480032
Partial derivation of the expression on the variable x:
$\frac{\partial f}{\partial x} = 4.000000000 \cdot \cos x$
In the point $M_0(x_0,\, y_0) = (3.000000000,\, 2.000000000)$ it's value = -3.959970 !!!
Partial derivation of the expression on the variable y:
$\frac{\partial f}{\partial y} = 0.141120008 \cdot 2.000000000 \cdot y$
In the point $M_0(x_0,\, y_0) = (3.000000000,\, 2.000000000)$ it's value = 0.564480 !!!
**Full derivation:**
$\sqrt{(4.000000000 \cdot \cos x)^{2.000000000} + (0.141120008 \cdot 2.000000000 \cdot y)^{2.000000000}}$
In the point $M_0(x_0,\, y_0) = (3.000000000,\, 2.000000000)$ it's value = 4.000000000 !!!
Now let's consider the expression as a function of x variable: f(x) = $4.000000000 \cdot \sin x$
**Maklorens formula for** $x \to x_0 = 3.000000000$:
f(x) $= 0.564480032 + (-3.959969986) \cdot (x - 3.000000000) + (-0.282240016) \cdot (x - 3.000000000)^{2.000000000} + 0.659994998 \cdot (x - 3.000000000)^{3.000000000} +$
**Graph** f(x) = $4.000000000 \cdot \sin x$ on the diapasone $x \in [-10 : 10]$ :

**Tangent equation** in the point $x_0 = 0.000000000$: f(x) $= 4.000000000 \cdot x$
**Normal equation** in the point $x_0 = 0.000000000$: f(x) $= (-0.250000000) \cdot (x - 0.000000000) + 0.000000000$