$CrInGeCrInGeProduction.Supercringeintroductionhere:$

Let's calculate smth with expression given: f(x, y) = $x \cdot y^{2.000}$

Firstly, let's insert all constants and simplify it: f()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

1 step: finding a derivation of function:

$$y$$

here it is:

$$1.000$$

2 step: finding a derivation of function:

$$y^{2.000}$$

here it is:

$$2.000 \cdot y$$

3 step: finding a derivation of function:

$$x$$

here it is:

$$1.000$$

4 step: finding a derivation of function:

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

here it is:

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

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 of function:

$$y$$

here it is:

$$1.000$$

2 step: finding a derivation of function:

$$y^{2.000}$$

here it is:

$$2.000 \cdot y$$

3 step: finding a derivation of function:

$$x$$

here it is:

$$1.000$$

4 step: finding a derivation of function:

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

here it is:

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

Calculating the 2 derivation of the expression:

1 step: finding a derivation of function:

$$x$$

here it is:

$$1.000$$

2 step: finding a derivation of function:

$$y$$

here it is:

$$1.000$$

3 step: finding a derivation of function:

$$2.000$$

here it is:

$$0.000$$

4 step: finding a derivation of function:

$$2.000 \cdot y$$

here it is:

$$2.000$$

5 step: finding a derivation of function:

$$2.000 \cdot y \cdot x$$

here it is:

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

6 step: finding a derivation of function:

$$y$$

here it is:

$$1.000$$

7 step: finding a derivation of function:

$$y^{2.000}$$

here it is:

$$2.000 \cdot y$$

8 step: finding a derivation of function:

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

here it is:

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

Calculating the 3 derivation of the expression:
1 step: finding a derivation of function:

$$y$$

here it is:

$$1.000$$

2 step: finding a derivation of function:

$$2.000$$

here it is:

$$0.000$$

3 step: finding a derivation of function:

$$2.000 \cdot y$$

here it is:

$$2.000$$

4 step: finding a derivation of function:

$$x$$

here it is:

$$1.000$$

5 step: finding a derivation of function:

$$2.000$$

here it is:

$$0.000$$

6 step: finding a derivation of function:

$$2.000 \cdot x$$

here it is:

$$2.000$$

7 step: finding a derivation of function:

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

here it is:

$$4.000$$

8 step: finding a derivation of function:

$$y$$

here it is:

$$1.000$$

9 step: finding a derivation of function:

$$2.000$$

here it is:

$$0.000$$

10 step: finding a derivation of function:

$$2.000 \cdot y$$

here it is:

$$2.000$$

11 step: finding a derivation of function:

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

here it is:

$$6.000$$

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