

This is the beginning of an exciting subtraction of derivatives. Relax
and enjoy!

By Tuzman Alexander

December 17, 2020



1 This is subtraction of 1'st derivative

Let's make simpler $\sin(3 + 7 + 1 + x) + (\cos(x))^2$

Now this expression simplified to $\sin(11+x) + (\cos(x))^2$

I have a problem, doctor. Nobody understands me.

$$\sin(3+7+1+x) + (\cos(x))^2$$



Just try to be simpler.

Ok.

$$\sin(11 + x) + (\cos(x))^2$$

Let's differentiate x

Now this expression turned into 1

BEFORE 

x

AFTER 

1

Let's differentiate $\cos(x)$

Now this expression turned into $(0 - \sin(x)) \cdot 1$

BEFORE 

$$\cos(x)$$

AFTER 

$$(0 - \sin(x)) \cdot 1$$

Let's differentiate $(\cos(x))^2$

Now this expression turned into $(\cos(x))^{2-1} \cdot 2 \cdot (0 - \sin(x)) \cdot 1$

BEFORE 

$$(\cos(x))^2$$

AFTER 

$$(\cos(x))^{2-1} \cdot 2 \cdot (0 - \sin(x)) \cdot 1$$

Let's differentiate x

Now this expression turned into 1

BEFORE 

x

AFTER 

1

Let's differentiate 11

Now this expression turned into 0

BEFORE 

11

AFTER 

0

Let's differentiate $11 + x$

Now this expression turned into $0 + 1$

BEFORE 

$$11 + x$$

AFTER 

$$0 + 1$$

Let's differentiate $\sin(11 + x)$

Now this expression turned into $\cos(11 + x) \cdot (0 + 1)$

BEFORE 

$$\sin(11 + x)$$

AFTER 

$$\cos(11 + x) \cdot (0 + 1)$$

Let's differentiate $\sin(11 + x) + (\cos(x))^2$

Now this expression turned into $\cos(11 + x) \cdot (0 + 1) + (\cos(x))^{2-1} \cdot 2 \cdot (0 - \sin(x)) \cdot 1$

BEFORE 

$$\sin(11 + x) + (\cos(x))^2$$

AFTER 

$$\begin{aligned} &\cos(11 + x) \cdot (0 + 1) + \\ &(\cos(x))^{2-1} \cdot 2 \cdot (0 - \\ &\sin(x)) \cdot 1 \end{aligned}$$

Let's make simpler $\cos(11+x) \cdot (0+1) + (\cos(x))^{2-1} \cdot 2 \cdot (0 - \sin(x)) \cdot 1$

Now this expression simplified to $\cos(11+x) + \cos(x) \cdot 2 \cdot \sin(x)$

I have a problem, doctor. Nobody understands me.

$$\cos(11 + x) \cdot (0 + 1) + (\cos(x))^{2-1} \cdot 2 \cdot (0 - \sin(x)) \cdot 1$$



Just try to be simpler.

Ok.

$$\cos(11 + x) + \cos(x) \cdot 2 \cdot \sin(x)$$

$$\cos(11 + x) + \cos(x) \cdot 2 \cdot \sin(x)$$

2 This is subtraction of 2'st derivative

Let's make simpler $\cos(11 + x) + \cos(x) \cdot 2 \cdot \sin(x)$

Now this expression simplified to $\cos(11 + x) + \cos(x) \cdot 2 \cdot \sin(x)$

I have a problem, doctor. Nobody understands me.

$$\cos(11 + x) + \cos(x) \cdot 2 \cdot \sin(x)$$



Just try to be simpler.

Ok.

$$\cos(11 + x) + \cos(x) \cdot 2 \cdot \sin(x)$$

Let's differentiate x

Now this expression turned into 1

BEFORE 

x

AFTER 

1

Let's differentiate $\sin(x)$

Now this expression turned into $\cos(x) \cdot 1$

BEFORE 

$$\sin(x)$$

AFTER 

$$\cos(x) \cdot 1$$

Let's differentiate 2

Now this expression turned into 0

BEFORE 

2

AFTER 

0

Let's differentiate x

Now this expression turned into 1

BEFORE 

x

AFTER 

1

Let's differentiate $\cos(x)$

Now this expression turned into $(0 - \sin(x)) \cdot 1$

BEFORE 

$$\cos(x)$$

AFTER 

$$(0 - \sin(x)) \cdot 1$$

Let's differentiate $\cos(x) \cdot 2$

Now this expression turned into $(0 - \sin(x)) \cdot 1 \cdot 2 + \cos(x) \cdot 0$

BEFORE 

$$\cos(x) \cdot 2$$

AFTER 

$$(0 - \sin(x)) \cdot 1 \cdot 2 + \cos(x) \cdot 0$$

Let's differentiate $\cos(x) \cdot 2 \cdot \sin(x)$

Now this expression turned into $((0 - \sin(x)) \cdot 1 \cdot 2 + \cos(x) \cdot 0) \cdot \sin(x) + \cos(x) \cdot 2 \cdot \cos(x) \cdot 1$

BEFORE 

$$\cos(x) \cdot 2 \cdot \sin(x)$$

AFTER 

$$((0 - \sin(x)) \cdot 1 \cdot 2 + \cos(x) \cdot 0) \cdot \sin(x) + \cos(x) \cdot 2 \cdot \cos(x) \cdot 1$$

Let's differentiate x

Now this expression turned into 1

BEFORE 

x

AFTER 

1

Let's differentiate 11

Now this expression turned into 0

BEFORE 

11

AFTER 

0

Let's differentiate $11 + x$

Now this expression turned into $0 + 1$

BEFORE 

$$11 + x$$

AFTER 

$$0 + 1$$

Let's differentiate $\cos(11 + x)$

Now this expression turned into $(0 - \sin(11 + x)) \cdot (0 + 1)$

BEFORE 

$$\cos(11 + x)$$

AFTER 

$$(0 - \sin(11 + x)) \cdot (0 + 1)$$

Let's differentiate $\cos(11 + x) + \cos(x) \cdot 2 \cdot \sin(x)$

Now this expression turned into $(0 - \sin(11 + x)) \cdot (0 + 1) + ((0 - \sin(x)) \cdot 1 \cdot 2 + \cos(x) \cdot 0) \cdot \sin(x) + \cos(x) \cdot 2 \cdot \cos(x) \cdot 1$

BEFORE 

$$\cos(11 + x) + \cos(x) \cdot 2 \cdot \sin(x)$$

AFTER 

$$(0 - \sin(11 + x)) \cdot (0 + 1) + ((0 - \sin(x)) \cdot 1 \cdot 2 + \cos(x) \cdot 0) \cdot \sin(x) + \cos(x) \cdot 2 \cdot \cos(x) \cdot 1$$

Let's make simpler $(0 - \sin(11 + x)) \cdot (0 + 1) + ((0 - \sin(x)) \cdot 1 \cdot 2 + \cos(x) \cdot 0) \cdot \sin(x) + \cos(x) \cdot 2 \cdot \cos(x) \cdot 1$

Now this expression simplified to $\sin(11 + x) + \sin(x) \cdot 2 \cdot \sin(x) + \cos(x) \cdot 2 \cdot \cos(x)$

I have a problem, doctor. Nobody understands me.

$$(0 - \sin(11 + x)) \cdot (0 + 1) + ((0 - \sin(x)) \cdot 1 \cdot 2 + \cos(x) \cdot 0) \cdot \sin(x) + \cos(x) \cdot 2 \cdot \cos(x) \cdot 1$$



Just try to be simpler.

Ok.

$$\sin(11 + x) + \sin(x) \cdot 2 \cdot \sin(x) + \cos(x) \cdot 2 \cdot \cos(x)$$

$$\sin(11 + x) + \sin(x) \cdot 2 \cdot \sin(x) + \cos(x) \cdot 2 \cdot \cos(x)$$

That is all

