

Science article number 4790
 Author: github.com/pooh64/Derivate_Engine
 Aim: Find derivate of:

$$\cos \left(\frac{(e)^{\tan(x)}}{x} \right)$$

Derivate of:

$$x$$

in a few hours of hard work:

$$1$$

Derivate of:

$$x$$

after hard calculations:

$$1$$

Derivate of:

$$\tan(x)$$

by asking the teacher

$$\frac{1}{(\cos(x))^2}$$

Derivate of:

$$(e)^{\tan(x)}$$

in a few hours of hard work:

$$\frac{(e)^{\tan(x)}}{(\cos(x))^2}$$

Derivate of:

$$\frac{(e)^{\tan(x)}}{x}$$

that was easy:

$$\frac{\frac{(e)^{\tan(x)}}{(\cos(x))^2} \cdot x - (e)^{\tan(x)}}{(x)^2}$$

Derivate of:

$$\cos\left(\frac{(e)^{\tan(x)}}{x}\right)$$

by asking the teacher

$$(-1) \cdot \sin\left(\frac{(e)^{\tan(x)}}{x}\right) \cdot \frac{\frac{(e)^{\tan(x)}}{(\cos(x))^2} \cdot x - (e)^{\tan(x)}}{(x)^2}$$

Simplify: finally:

$$(-1) \cdot \sin\left(\frac{(e)^{\tan(x)}}{x}\right) \cdot \frac{\frac{(e)^{\tan(x)}}{(\cos(x))^2} \cdot x - (e)^{\tan(x)}}{(x)^2}$$

List of used literature:

The C Programming Language K&R
MIPT 2017