

## Function derivative example

Calculate the derivative of the third degree of following function:

$$f(x) = \cos 5 \cdot x + e^{-2 \cdot x}$$

Function  $f(x)$  is a sum of two functions

$$f(x) = a(x) + b(x)$$

$$a(x) = \cos 5 \cdot x$$

$$b(x) = e^{-2 \cdot x}$$

As you see component function  $a(x)$  and  $b(x)$  are complex.

$$f'(x) = a'(x) + b'(x)$$

$$f'(x) = -5 \cdot \sin 5 \cdot x - 2 \cdot e^{-2 \cdot x}$$