

Derivace složené funkce

$$y = f(g(x))$$

$$y' = f'(g(x)) \cdot g'(x)$$

$$y = \sin x$$

$$y' = \cos x$$

$$y = \sin(2x-3)$$

$$y' = \cos(2x-3) \cdot 2$$

$$y = \sin(x^2+5x-1)$$

$$y' = \cos(x^2+5x-1) \cdot (2x+5)$$

$$y = \sqrt{x} = x^{\frac{1}{2}}$$

$$y' = \frac{1}{2} \cdot x^{-\frac{1}{2}} = \frac{1}{2\sqrt{x}}$$

$$y = \sqrt{2x-3}$$

$$y' = \frac{1}{2\sqrt{2x-3}} \cdot 2 = \frac{1}{\sqrt{2x-3}}$$

$$y = \sqrt{x^2+5x-1}$$

$$y' = \frac{1}{2\sqrt{x^2+5x-1}} \cdot (2x+5)$$

$$y = e^x$$

$$y' = e^x$$

$$y = e^{2x-3}$$

$$y' = e^{2x-3} \cdot 2 = 2e^{2x-3}$$

$$y = e^{x^2+5x-1}$$

$$y' = e^{x^2+5x-1} \cdot (2x+5)$$

$$y = \ln x$$

$$y' = \frac{1}{x}$$

$$y = \ln(2x-3)$$

$$y' = \frac{1}{2x-3} \cdot 2 = \frac{2}{2x-3}$$

$$y = \ln(x^2+5x-1)$$

$$y' = \frac{1}{x^2+5x-1} \cdot (2x+5) = \frac{2x+5}{x^2+5x-1}$$

$$y = \frac{1}{\sin^2(3x-1)} = [\sin(3x-1)]^{-2}$$

$$y' = -2 [\sin(3x-1)]^{-3} \cdot \cos(3x-1) \cdot 3 = \frac{-6 \cos(3x-1)}{\sin^3(3x-1)}$$