## Function derivative example

Calculate the derivative of the following function:

$$f(x) = \sqrt{1+x^2} \cdot \ln x$$

$$f(x) = (1+x^2)^{\frac{1}{2}} \cdot \ln x$$

$$f'(x) = \frac{1}{2} \cdot (1+x^2)^{\frac{1}{2}} \cdot 2 \cdot x \cdot \ln x + \frac{(1+x^2)^{\frac{1}{2}}}{x}$$

$$f'(x) = x \cdot \ln x \cdot (1+x^2)^{\frac{1}{2}} + \frac{(1+x^2)^{\frac{1}{2}}}{x}$$