

Domáca úloha cvičenie 8 - riešenie

DÚ: Zderivujte funkciu $f(x) = \log_2(\sqrt[3]{\cos 4x})$.

Riešenie:

$$\begin{aligned} f'(x) &= (\log_2(\sqrt[3]{\cos 4x}))' = \left(\log_2(\cos 4x)^{\frac{1}{3}} \right)' = \left(\frac{1}{3} \log_2(\cos 4x) \right)' = \frac{1}{3} (\log_2(\cos 4x))' \\ &= \frac{1}{3} \frac{(\cos 4x)'}{(\ln 2)(\cos 4x)} = \frac{1}{3} \frac{(-\sin 4x)(4x)'}{(\ln 2)(\cos 4x)} = -\frac{4}{3 \ln 2} \frac{\sin 4x}{\cos 4x} = -\frac{4 \operatorname{tg} 4x}{3 \ln 2} \end{aligned}$$