

$$y = \ln(2x^2 - 8)$$

$$y = \ln u \quad \text{und} \quad u = 2x^2 - 8$$

$$y' = \frac{1}{u} \quad u' = 4x$$

$$\begin{aligned} y' &= \frac{1}{u} \cdot 4x \\ &= \frac{1}{2x^2 - 8} \cdot 4x \\ &= \frac{4x}{2(x^2 - 4)} \\ &= \frac{2x}{x^2 - 4} \end{aligned}$$