

$$y = \sqrt{3x^2 - 1}$$

---

$$y = \sqrt{u} \quad \text{und} \quad u = 3x^2 - 1$$

$$y' = \frac{1}{2\sqrt{u}} \quad u' = 6x$$

$$\begin{aligned} y' &= \frac{1}{2\sqrt{3x^2 - 1}} \cdot 6x \\ &= \frac{6x}{2\sqrt{3x^2 - 1}} \\ &= \frac{3x}{\sqrt{3x^2 - 1}} \end{aligned}$$