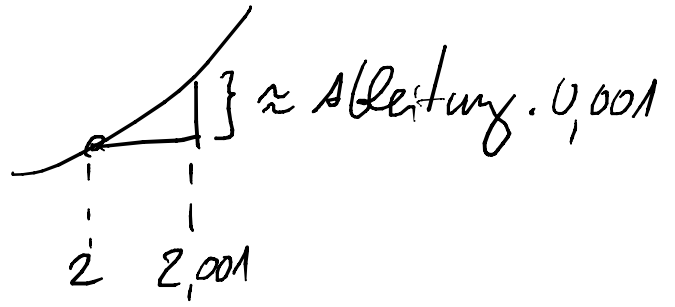


Praktikum 1

1. $\frac{dx^3}{dx} = 3x^2$



$$\begin{aligned}\Rightarrow 2,001^3 &\approx 2^3 + 3 \cdot 2^2 \cdot 0,001 \\ &= 8 + 12 \cdot 0,001 \\ &= 8,012\end{aligned}$$

2. $f'(x) = \frac{\sin'(x) \cos(x) - \sin(x) \cos'(x)}{(\cos(x))^2}$

$$= \frac{(\cos(x))^2 + (\sin(x))^2}{(\cos(x))^2}$$

$$= \frac{1}{(\cos(x))^2}$$

Pythagoras

3. $\sqrt{x} \sqrt{x} = x$

Beide Seiten ableiten:

$$\frac{d\sqrt{x}}{dx} \sqrt{x} + \sqrt{x} \frac{d\sqrt{x}}{dx} = 1$$



$$2\sqrt{x} \frac{d\sqrt{x}}{dx}$$

Beide Seiten $\cdot 2\sqrt{x}$

$$\Rightarrow \frac{d\sqrt{x}}{dx} = \frac{1}{2\sqrt{x}}$$