

Klasse	Art	Schwierigkeit	Thema	S. 51
11	Üben	X	Ableitung	3

$$\text{a) } \left(\frac{1}{x} + 1\right)' = -\frac{1}{x^2}$$

$$\text{b) } \left(x^2 - \frac{1}{x^2}\right)' = 2x + \frac{2}{x^3}$$

$$\text{c) } f(z) = \frac{4}{3}z^6 \quad f'(z) = 8z^5$$

$$\text{d) } \left(x^3 + \frac{1}{x^5}\right)' = 3x^2 - \frac{5}{x^6}$$

$$\text{e) } f(u) = u^{-8} - 8u^3 \quad \Rightarrow \quad f'(u) = -8u^{-9} - 24u^2$$

$$\text{f) } \left(\frac{2x}{5} + \frac{5}{x^2}\right)' = \frac{2}{5} - \frac{10}{x^3}$$

$$\text{g) } \left(\frac{3}{4x^2}\right)' = -\frac{3}{2x^3}$$

$$\text{h) } f(x) = 5 \quad \Rightarrow \quad f'(x) = 0$$

$$\text{i) } f(x) = \frac{3}{5}x^{-5} \quad \Rightarrow \quad f'(x) = -3x^{-6}$$

$$\text{j) } \left(\frac{1}{2x^{10}} - 3\right)' = -\frac{5}{x^{11}}$$