

**0.0.1 36. Hausaufgabe****Selbstgestellte Aufgaben**

1.  $f(x) = \sqrt{5x}; \Rightarrow f'(x) = \frac{\sqrt{5}}{2\sqrt{x}} = \frac{\sqrt{5x}}{2x};$

2.  $f(x) = x \cdot (2x^2 + 3) = 2x^3 + 3x; \Rightarrow f'(x) = 6x^2 + 3;$

3.  $f(x) = \frac{\sqrt{x}}{x} = \frac{x^{\frac{1}{2}}}{x^1} = x^{-\frac{1}{2}}; \Rightarrow f'(x) = -\frac{1}{2}x^{-\frac{3}{2}} = -\frac{1}{2} \frac{1}{\sqrt{x^3}} = -\frac{1}{2} \frac{\sqrt{x^3}}{x^3};$

4.  $f(x) = x^m \cdot x^n = x^{m+n}; \Rightarrow f'(x) = (m+n)x^{m+n-1};$