



Mathematik-Übungsblatt mit Lösungen von www.worksheeps.de / www.mathe-aufgaben.net
Mathe-Aufgaben mit Lösungen einfach schnell selbst erstellen.

Potenzregel

1) $f(x) = (-20)x^{-34}$

$$f'(x) = 680x^{-35}$$

$$f''(x) = (-23800)x^{-36}$$

2) $f(x) = 5x^{45} + (-10)x^{34} + (-18)x^{26} + (-14)x^4 + 1$

$$f'(x) = 225x^{44} + (-340)x^{33} + (-468)x^{25} + (-56)x^3$$

$$f''(x) = 9900x^{43} + (-11220)x^{32} + (-11700)x^{24} + (-168)x^2$$

3) $f(x) = (-20)x^{21}$

$$f'(x) = (-420)x^{20}$$

$$f''(x) = (-8400)x^{19}$$

4) $f(x) = 2x^{\sqrt{7}}$

$$f'(x) = 2 \cdot \sqrt{7} \cdot x^{\sqrt{7}-1}$$

$$f''(x) = (14 - 2\sqrt{7}) \cdot x^{\sqrt{7}-2}$$

5) $f(x) = (-9)x^{\sqrt{10}}$

$$f'(x) = (-9) \cdot \sqrt{10} \cdot x^{\sqrt{10}-1}$$

$$f''(x) = ((-90) - (-9)\sqrt{10}) \cdot x^{\sqrt{10}-2}$$

6) $f(x) = 17x^{-1}$

$$f'(x) = (-17)x^{-2}$$

$$f''(x) = 34x^{-3}$$

7) $f(x) = 17x^{\sqrt{17}}$

$$f'(x) = 17 \cdot \sqrt{17} \cdot x^{\sqrt{17}-1}$$

$$f''(x) = (289 - 17\sqrt{17}) \cdot x^{\sqrt{17}-2}$$

8) $f(x) = 11x^{28}$

$$f'(x) = 308x^{27}$$

$$f''(x) = 8316x^{26}$$

9) $f(x) = (-5)x^{23}$

$$f'(x) = (-115)x^{22}$$

$$f''(x) = (-2530)x^{21}$$

10) $f(x) = (-12)x^9 + 14$

$$f'(x) = (-108)x^8$$

$$f''(x) = (-864)x^7$$