Lösungen zu Aufgaben zu Ableitungen 1

Bilde die 1. und die 2. Ableitung!

f(x)	f'(x)	f''(x)
$f(x) = 3x^2 + 2x + 4$	$6x + 2$	6
$f(x) = 5x^3 - 6x^2 + 3x$	$15x^2 - 12x + 3$	$30x - 12$
$f(x) = -6x^2 + 8$	$-12x$	-12
$f(x) = -9x^4 + 6x^3 + 4x^2$	$-36x^3 + 18x^2 + 8x$	$-108x^2 + 36x + 8$
$f(x) = -6x + 2$	-6	0
$f(x) = 9x^7 - 6x^5 + 3x^3$	$63x^6 - 30x^4 + 9x^2$	$378x^5 - 120x^3 + 18x$
$f(x) = 6$	0	0
$f(x) = -9x^8 + 5x^2 - 7x$	$-72x^7 + 10x - 7$	$-504x^6 + 10$
$f(x) = (x-1) \cdot (x+3)$ $= x^2 + 2x - 3$	$2x + 2$	2
$f(x) = x^2 \cdot (x+1) \cdot (x-2)$ $= x^4 - x^3 - 2x^2$	$4x^3 - 3x^2 - 4x$	$12x^2 - 6x - 4$
$f(x) = \frac{2}{3}x^3 - \frac{3}{5}x^2 + \frac{5}{7}$	$2x^2 - \frac{6}{5}x$	$4x - \frac{6}{5}$
$f(x) = \frac{5}{6}x^6 - \frac{1}{4}x^2 + \frac{6}{7}x$	$5x^5 - \frac{1}{2}x + \frac{6}{7}$	$25x^4 - \frac{1}{2}$
$f(x) = \frac{2}{3}x^3 - \frac{2}{5}x^2 + \frac{5}{7}$	$2x^2 - \frac{4}{5}x$	$4x - \frac{4}{5}$
$f(x) = -\frac{6}{21}x^7 - \frac{4}{15}x^5 + \frac{9}{16}x^4$	$-2x^6 - \frac{4}{3}x^4 + \frac{9}{4}x^3$	$-12x^5 - \frac{16}{3}x^3 + \frac{27}{4}x^2$
$f(x) = 4x^3 + \sqrt{2}x^2 - \sqrt{6}$	$12x^2 + 2\sqrt{2}x$	$24x + 2\sqrt{2}$
$f(x) = -\sqrt{3} + \sqrt{3}x^2$	$2\sqrt{3}x$	$2\sqrt{3}$