Lösung A1

$f_1(x) = (3x-2)^2$	$f_1'(x) = 2\cdot(3x-2)\cdot 3 = 6\cdot(3x-2)$
$f_2(x) = (3-x^2)^3$	$f_2'(x) = 3\cdot(3-x^2)^2\cdot(-2x) = -6x\cdot(3-x^2)^2$
$f_3(x) = (x-1)^2$	$f_3'(x) = 2\cdot(x-1)$
$f_4(x) = (2x^3-2x)^3$	$f_4'(x) = 3\cdot(2x^3-2x)^2\cdot(6x^2-2) = 6\cdot(3x^2-1)(2x^3-2x)^2$
$f_5(x) = (5x^2-3)^3$	$f_5'(x) = 3\cdot(5x^2-3)^2\cdot 10x = 30x\cdot(5x^2-3)^2$
$f_6(x) = (x^2-3x)^2$	$f_6'(x) = 2\cdot(x^2-3x)\cdot(2x-3)$
$f_7(x) = (x^2-2x)^5$	$f_7'(x) = 5\cdot(x^2-x+2)^4\cdot(2x-2) = 10(x-1)(x^2-x+2)^4$
$f_8(x) = (x^2-x+2)^8$	$f_8'(x) = 8\cdot(x^2-x+2)^7\cdot(2x-1)$
$f_9(x) = (3x^3+4)^5$	$f_9'(x) = 5\cdot(3x^3+4)^4\cdot 9x^2 = 45x^2\cdot(3x^3+4)^4$

Lösung A2

$f_1'(x) = \frac{8x-3}{3\cdot\sqrt[3]{4x^2-3x}}$	$f_{18}(x) = 0{,}5\sqrt[3]{(4x^2-3x)^2}$
$f_2'(x) = -\frac{0{,}5\cdot cos(0{,}5x-1)}{sin^2(0{,}5x-1)}$	$f_{17}(x) = \frac{1}{sin(0{,}5x-1)}$
$f_3'(x) = -2\pi\cdot\cos(2(x-3))$	$f_{16}(x) = \pi cos(2(x-3))+1$
$f_4'(x) = 42x^6\cdot(4-x^7)^{-7}$	$f_{15}(x) = (4-x^7)^{-6}$
$f_5'(x) = -10\cdot(2x^3+3x^2+x)^4\cdot(6x^2+6x+1)$	$f_{14}(x) = -2(2x^3+3x^2+x)^5$
$f_6'(x) = 4\cdot(5x^4-4x^3-2x+5)^3\cdot(20x^3-12x^2-2)$	$f_{13}(x) = (5x^4-4x^3-2x+5)^4$
$f_7'(x) = 3\cdot(5x^3+x^2-4x)^2\cdot(15x^2-2x-4)$	$f_{12}(x) = (5x^3+x^2-4x)^3$
$f_8'(x) = 2k\cdot(x^2-2x)^{k-1}\cdot(x-1)$	$f_{11}(x) = (x^2-2x)^k$
$f_9'(x) = 3\cdot(4x^2-3x)^2\cdot(8x-3)$	$f_{10}(x) = (4x^2-3x)^3$

Lösung A3

$f_1(x) = (4x^2 - 2x)^3$	$f_1'(x) = 3 \cdot (4x^2 - 2x)^2 \cdot (8x - 2) = 6 \cdot (4x - 1)(4x^2 - 2x)^2$
$f_2(x) = (x^3 - 2x)^m$	$f_2'(x) = m \cdot (x^3 - 2x)^{m-1} \cdot (3x^2 - 2)$
$f_3(x) = (x^5 - x^4)^5$	$f_3'(x) = 5 \cdot (x^5 - x^4)^4 \cdot (5x^4 - 4x^3)$
$f_4(x) = (3x^3 + 5x)^6$	$f_4'(x) = 6 \cdot (3x^3 + 5x)^5 \cdot (9x^2 + 5)$
$f_5(x) = (2x + 1)^7$	$f_5'(x) = 7 \cdot (2x + 1)^6 \cdot 2 = 14 \cdot (2x + 1)^6$
$f_6(x) = (2x^{-2} + 3x^2)^8$	$f_6'(x) = 8 \cdot (2x^{-2} + 3x^2)^7 \cdot (-4x^{-3} + 6x)$
$f_7(x) = (27x - 35)^9$	$f_7'(x) = 9 \cdot (27x - 35)^8 \cdot 27 = 243 \cdot (27x - 35)^8$
$f_8(x) = (2x^2 - 4x)^{-2}$	$f_8'(x) = -2(2x^2 - 4x)^{-3} \cdot (4x - 4) = -8 \cdot (x - 1) \cdot (2x^2 - 4x)^{-3}$
$f_9(x) = (sin(x))^3$	$f_9'(x) = 3 \cdot (sin(x))^2 \cdot cos(x)$
$f_{10}(x) = \left(\frac{1}{2}x^2 + \frac{1}{3}x^3\right)^2$	$f_{10}'(x) = 2 \cdot \left(\frac{1}{2}x^2 + \frac{1}{3}x^3\right) \cdot (2x + 3x^2)$
$f_{11}(x) = (7x + 5)^{-3}$	$f_{11}'(x) = -3(7x + 5)^{-4} \cdot 7 = -21(7x + 5)^{-4}$
$f_{12}(x) = (1{,}9x^2 + 0{,}9x)^4$	$f_{12}'(x) = 4 \cdot (1{,}9x^2 + 0{,}9x)^3 \cdot (3{,}8x + 0{,}9)$
$f_{13}(x) = \frac{1}{x-3}$	$f_{13}'(x) = -(x - 3)^{-2} = -\frac{1}{(x-3)^2}$
$f_{14}(x) = \frac{3}{(x^2-1)^2}$	$f_{14}'(x) = 3 \cdot (-2) \cdot (x^2 - 1)^{-3} \cdot 2x = -\frac{12x}{(x^2-1)^3}$
$f_{15}(x) = \sqrt{x^3}$	$f_{15}'(x) = \frac{3}{2}x^{\frac{1}{2}} = \frac{3}{2}\sqrt{x}$
$f_{16}(x) = \sqrt[3]{3 - 2x}$	$f_{16}'(x) = \frac{1}{3} \cdot (3 - 2x)^{-\frac{2}{3}} \cdot -2 = -\frac{2}{3 \cdot \sqrt[3]{(3-2x)^2}}$