Lösung A1

$f_1(x) = x^2 \cdot (x-1)$	$f_1'(x) = 2x \cdot (x-1) + x^2 = 3x^2 - 2x$
$f_2(x) = x \cdot (x-1)^2$	$f_2'^{(x)} = (x-1)^2 + 2x \cdot (x-1) = 3x^2 - 4x + 1$
$f_3(x) = (2x^2 - 5x) \cdot (x-6)$	$f_3'(x) = (4x-5) \cdot (x-6) + 2x^2 - 5x = 6x^2 - 34x + 30$
$f_4(x) = (x^2 - 2x) \cdot (x^2 + 2x + 1)$	$f_4'(x) = (2x-2)(x^2+2x+1) + (x^2-2x)(2x+2)$ $= 4x(x^2-1)$
$f_5(x) = (2-x) \cdot (x^2 - 1)$	$f_5'(x) = -(x^2-1) + (2-x) \cdot 2x = -3x^2 + 4x + 1$
$f_6(t) = \left(\frac{1}{2}t^2 + 3\right) \cdot (t-1)$	$f_6'(t) = t \cdot (t-1) + \frac{1}{2}t^2 + 3 = \frac{3}{2}t^2 - t + 3$
$f_7(t) = t^2 \cdot sin\,(t)$	$f_7'(t) = 2t \cdot sin(t) + t^2 \cdot cos(t) = t \cdot \big(2\,sin(t) + tcos(t)\big)$

Lösung A2

$f_1(x) = (4x-3)(3x-2)$	$f_1'(x) = 4 \cdot (3x-2) + 3 \cdot (4x-3) = 24x - 17$
$f_2(x) = (3-4x)(6-5x)$	$f_2'^{(x)} = -4 \cdot (6-5x) - 5 \cdot (3-4x) = 40x - 39$
$f_3(x) = (3x^2-2)(x^3-1)$	$f_3'(x) = 6x \cdot (x^3-1) + 3x^2 \cdot (3x^2-2) = 3x \cdot (5x^3 - 2(1+x))$
$f_4(x) = (-4x^2+3)(x^2+5)$	$f_4'(x) = -8x \cdot (x^2+5) + 2x \cdot (-4x^2+3) = -16x^3 - 34x$
$f_5(x) = 3x^2 \cdot (2-x^2)$	$f_5'(x) = 6x \cdot (2-x^2) - 6x^3 = 12x(-x^2+1)$
$f_6(t) = (t+2t^2) \cdot t^2$	$f_6'(t) = 2t \cdot (t+2t^2) + (1+4t) \cdot t^2 = t^2 \cdot (8t+3)$
$f_7(t) = (1-t^2)(2t+3t^2-5)$	$f_7'(t) = -2t \cdot (2t+3t^2-5) + (2+6t) \cdot (1-t^2)$ $= -12t^3 - 6t^2 + 16t + 2$

Lösung A3

$f_1(x) = (12x-5)(1-3x^2)$	$f_1'(x) = (12x-5)(-6x) + 12 \cdot (1-3x^2)$
$f_2(x) = (2x+1)(3x+1)$	$\cancel{f_2'(x) = 2 \cdot 3 + (2x+1) \cdot 3}$ $f_2'(x) = 2 \cdot (3x+1) + 3 \cdot (2x+1)$
$f_3(x) = x^4 \cdot (3x+10)$	$\cancel{f_3'(x) = 4x^3 \cdot 3}$ $f_3'(x) = 4x^3 \cdot (3x+10) + 3x^4$
$f_4(x) = 0{,}5x^5 \cdot (2-4x^3)$	$f_4'(x) = 2{,}5x^4 \cdot (2-4x^3) - 6x^7$
$f_5(x) = 4x^2 \cdot (12+x^2)$	$\cancel{f_5'(x) = 4x(12+x^2) + 4x^4}$ $f_5'(x) = 8x(12+x^2) + 8x^3$
$f_6(t) = (5x^3-2x) \cdot x$	$f_6'(t) = (5x^3-2x) + x \cdot (15x^2-2)$