Derivada del producte de dos polinomis

1) $y = (-3x^2-2x+3)(-4x^2-6x-2)$

$y' = (-6x-2)(-4x^2-6x-2)+(-3x^2-2x+3)(-8x-6) =$
$= 24x^3+44x^2+24x+4+24x^3+34x^2-12x-18$
$= 48x^3+78x^2+12x-14$

2) $y = (4x^2-6x-5)(4x^2+5x-3)$

$y' = (8x-6)(4x^2+5x-3)+(4x^2-6x-5)(8x+5) =$
$= 32x^3+16x^2-54x+18+32x^3-28x^2-70x-25$
$= 64x^3-12x^2-124x-7$

3) $y = (5x^2-5)(2x^2-4x-5)$

$y' = 10x(2x^2-4x-5)+(5x^2-5)(4x-4) =$
$= 20x^3-40x^2-50x+20x^3-20x^2-20x+20$
$= 40x^3-60x^2-70x+20$

4) $y = (-4x^2-6x-6)(-x^2+2x+1)$

$y' = (-8x-6)(-x^2+2x+1)+(-4x^2-6x-6)(2-2x) =$
$= 8x^3-10x^2-20x-6+8x^3+4x^2-12$
$= 16x^3-6x^2-20x-18$

5) $y = (-6x^2-5x-5)(4x^2+5x-5)$

$y' = (-12x-5)(4x^2+5x-5)+(-6x^2-5x-5)(8x+5) =$
$= -48x^3-80x^2+35x+25-48x^3-70x^2-65x-25$
$= -96x^3-150x^2-30x$

6) $y = (3x^2+2x+4)(x^2+x+4)$

$y' = (6x+2)(x^2+x+4)+(3x^2+2x+4)(2x+1) =$
$= 6x^3+8x^2+26x+8+6x^3+7x^2+10x+4$
$= 12x^3+15x^2+36x+12$

7) $y = (-5x^2+5x-3)(x^2+5)$

$y' = (-10x+5)(x^2+5)+(-5x^2+5x-3)2x =$
$= -10x^3+5x^2-50x+25-10x^3+10x^2-6x$
$= -20x^3+15x^2-56x+25$

8) $y = (3x^2+4x-1)(5x^2+6x-3)$

$y' = (6x+4)(5x^2+6x-3)+(3x^2+4x-1)(10x+6) =$
$= 30x^3+56x^2+6x-12+30x^3+58x^2+14x-6$
$= 60x^3+114x^2+20x-18$

9) $y = (-x^2+5x-3)(-4x^2-x-4)$

$y' = (5-2x)(-4x^2-x-4)+(-x^2+5x-3)(-8x-1) =$
$= 8x^3-18x^2+3x-20+8x^3-39x^2+19x+3$
$= 16x^3-57x^2+22x-17$

10) $y = (-5x^2+3x+2)(5x+3)$

$y' = (-10x+3)(5x+3)+(-5x^2+3x+2)5 =$
$= -50x^2-15x+9-25x^2+15x+10$
$= -75x^2+19$