

Klasse	Art	Schwierigkeit	Thema	S. 55
11	Lösung	X	Produktregel	3

a) $f(x) = (x^3 - 2x - 1)(x^2 + 3) = x^5 + x^3 - x^2 - 6x - 3$

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

mit Produktregel: $f'(x) = (3x^2 - 2)(x^2 + 3) + (x^3 - 2x - 1) \cdot 2x$

b)

$$f(x) = (2x^2 - x + 2)(0,5x^2 - x - 3)$$

$$f'(x) = (4x - 1)(0,5x^2 - x - 3) + (2x^2 - x + 2)(x - 1)$$

c)

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

$$f'(x) = 1 \cdot (x - 3) + (x - 1) \cdot 1 = 2x - 4$$

d)

$$f(x) = (x^4 - x^2 + 1)(x^2 - 2x + 2)$$

$$f'(x) = (4x^3 - 2x)(x^2 - 2x + 2) + (x^4 - x^2 + 1)(2x - 2)$$