

Bilde die Ableitungen

$$f(x) = 3x^2 \sin(x) \qquad f'(x) = 3(2x \sin(x) + x^2 \cos(x))$$

$$f(x) = x^4 e^x - 8 \qquad f'(x) = 4x^3 e^x + x^4 e^x = x^3 e^x (4 + x)$$

$$f(x) = 3x \cos(x) \qquad f'(x) = 3(\cos(x) - x \sin(x))$$

$$f(x) = x \ln(x) \qquad f'(x) = \ln(x) + \frac{x}{x} = \ln(x) + 1$$

$$f(x) = e^x \sin(x) \qquad f'(x) = e^x \sin(x) + e^x \cos(x) = e^x (\sin(x) + \cos(x))$$

$$f(x) = -5x^2 \ln(x) \qquad f'(x) = -5(2x \ln(x) + x) = -5x(2 \ln(x) + 1)$$

$$f(x) = -3x3^x \qquad f'(x) = -3(3^x + x 3^x \ln(3)) = -3^{x+1}(1 + x \ln(3))$$

$$f(x) = \sqrt{x} * \sin(x) \qquad f'(x) = \frac{1}{2\sqrt{x}} \sin(x) + \sqrt{x} \cos(x)$$

$$f(x) = x^3 e^x \qquad f'(x) = 3x^2 e^x + x^3 e^x = x^2 e^x (3 + x)$$

$$f(x) = 3ax e^x \qquad f'(x) = 3a(e^x + x e^x) = 3a e^x (1 + x)$$

$$f(x) = \sqrt[3]{x} \cos(x) \qquad f'(x) = \frac{\cos(x)}{3\sqrt[3]{x^2}} - \sqrt[3]{x} \sin(x)$$