

27

$$f(x) = \tilde{a}x^3 + \tilde{b}x^2 + \tilde{c}x + \tilde{d}$$

Punkt A (3 | a)  
(3 | 6)

Tangente  $y = 11x - 27$

Steigung 11

$$a = 11 \cdot 3 - 27$$

$$a = 6$$

$$f'(x) = 3\tilde{a}x^2 + 2\tilde{b}x + \tilde{c}$$

$$27\tilde{a} + 6\tilde{b} + \tilde{c} = 11$$

$$f(1) = 0$$

$$\tilde{a} + \tilde{b} + \tilde{c} + \tilde{d} = 0$$

$$f''(x) = 6\tilde{a}x + 2\tilde{b}$$

$$f''(1) = 0$$

$$6\tilde{a} + 2\tilde{b} = 0$$

$$f(3) = 6$$

$$27\tilde{a} + 9\tilde{b} + 3\tilde{c} + \tilde{d} = 6$$

$$\tilde{a} = 1 \quad \tilde{b} = -3 \quad \tilde{c} = 2 \quad \tilde{d} = 0$$

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

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