LÖSUNG ZU 281:

$f(x) = ax^4 + bx^3 + cx^2 + dx + e$

$f'(x) = 4ax^3 + 3bx^2 + 2cx + d$

$f''(x) = 12ax^2 + 6bx + 2c$

$f''(0) = 0$ Wendepunkt

$f'(0) = 0$ da t: y = 1 (k ist also 0)

$f(0) = 1$ da y = 1

$f(2) = -7$ Punkt auf Funktion

$f'(2) = 0$ Tiefpunkt

$f''(0) = 0 \rightarrow c = 0$

$f'(0) = 0 \rightarrow d = 0$

$f(0) = 1 \rightarrow e = 1$

$f'(2) = 0$ $0 = 32a + 12b$

$0 = 4 \cdot (8a + 3b)$ / : 4

$0 = 8a + 3b$ / - 3b

$-3b = 8a$ / : 8

$\frac{-3b}{8} = a$

$f(2) = -7 = 16a + 8b + 1$ $\frac{-3b}{8} = a$

$-7 = \frac{-3b}{8} \cdot 16 + 8b + 1$

$-7 = -6b + 8b + 1$

$-7 = 2b + 1$ / - 1

$-8 = 2b$

$b = -4 \rightarrow a = \frac{-3 \cdot (-4)}{8} = \frac{12}{8} = 1{,}5$

$f(x) = 1{,}5x^4 - 4x^3 + 1$