

$$\omega_2(15|y_2)$$

$$f(15) = \frac{759375}{3888} - \frac{1771875}{3888} + \frac{3125}{12}$$

$$f(15) = \frac{-3125}{12} + \frac{3125}{12}$$

$$f(15) = 0 \Rightarrow \omega_2(15|0)$$

ad Tiefpunkt T

$$f'(x) = 0$$

$$\Rightarrow 0 = \frac{5}{972} \left(\frac{1}{4} x^4 - 7x^3 + 45x^2 \right) \quad / \cdot \frac{972}{5}$$

$$0 = \frac{1}{4} x^4 - 7x^3 + 45x^2$$

$$0 = x^2 - 28x^3 + 180x^2$$

$$0 = x^2 (x^2 - 28x + 180)$$

$$\downarrow$$

$$x^2 = 0$$

$$\Leftrightarrow x = 0$$

$$\downarrow$$

$$x^2 - 28x + 180 = 0$$

$$\Rightarrow \text{Sattelpunkt} \Rightarrow x_1, x_2 = 14 \pm \sqrt{196 - 180}$$

$$x_2 = 14 \pm 4$$

$$x_1 = 10$$

$$x_2 = 18$$

$$f''(x_1) = \frac{5}{972} \cdot \underbrace{10}_{>0} \cdot \underbrace{4}_{>0} \cdot \underbrace{(-5)}_{<0}$$

$$f''(x) < 0 \Rightarrow \text{Hochpunkt}$$