

Integral Aufgabe 43

$$f(x) = (x - 4)\sqrt{x} \quad x \geq 0$$

Nullstellen:

$$\text{Mit } \sqrt{x} = x^{0,5}$$

$$(x - 4)\sqrt{x} = 0$$

$$x^{0,5} = 0 \quad |^2$$

$$x_1 = 0$$

$$x - 4 = 0 \quad | +4$$

$$x_2 = 4$$

$$A = \int_0^4 ((x - 4)x^{0,5}) dx = \int_0^4 (x^{1,5} - 4x^{0,5}) dx = \left| \frac{x^{2,5}}{2,5} - \frac{4x^{1,5}}{1,5} \right|_0^4 = |-8,53|$$

$$\mathbf{A = 8,53}$$

