

S 34 Nr. 1

a) $U_0 = 50 \text{ cm}$

$$U_{\square} = 2l + 2b = 50 \Rightarrow 2b = 50 - 2l \Rightarrow b = 25 - l$$

$$\underline{f(l) = b = 25 - l} \quad \text{ID}_f = (0; 25)$$

$$A_{\square} = l \cdot b = l \cdot (25 - l) \Rightarrow A(l) = \underline{g(l) = l \cdot (25 - l) = -l^2 + 25l}$$

$$\text{ID}_g = (0; 25)$$

b) $f(5) = 25 - 5 = 20$

$$g(2) = -2^2 + 25 \cdot 2 = 46$$

S 34 Nr. 2

a) $m_3 = \frac{115 - 112}{3 - 1} = \frac{3}{2} \frac{\text{Arbeitslose}}{\text{Monat}}$

b) $m_6 = \frac{94 - 112}{6 - 1} = -\frac{18}{5} = -3,6 \frac{\text{Arbeitslose}}{\text{Monat}}$

c) $m_c = \frac{107 - 123}{12 - 10} = -8 \frac{\text{Arbeitslose}}{\text{Monat}}$

d) $m_d = \frac{107 - 112}{12 - 1} = -\frac{5}{11} = -0,45 \frac{\text{Arbeitslose}}{\text{Monat}}$

S 34 Nr. 3

a) $f(x) = 2x^3 \Rightarrow \underline{f'(x) = 2 \cdot 3x^2 = 6x^2}$

b) $f(x) = x^{-3} \Rightarrow \underline{f'(x) = -3 \cdot x^{-4} = -\frac{3}{x^4}}$

c) $f(x) = -2x + 3 \cdot x^5 + 2x \Rightarrow \underline{f'(x) = -2 + 3 \cdot 5x^4 + 2 = 15x^4}$

d) $f(x) = \frac{1}{x^2} = x^{-2} \Rightarrow \underline{f'(x) = -2x^{-3} = -\frac{2}{x^3}}$

e) $f(x) = x^{-4} + x^5 \Rightarrow \underline{f'(x) = -4 \cdot x^{-5} + 5x^4 = -\frac{4}{x^5} + 5x^4}$

f) $f(x) = x + \sqrt{x} = x + x^{\frac{1}{2}} \Rightarrow \underline{f'(x) = 1 + \frac{1}{2}x^{-\frac{1}{2}} = 1 + \frac{1}{2\sqrt{x}}}$