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Text Mode



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Aufgabe 3

$$a) \text{ given } = 5/2x^{\frac{2}{3}} = 5(2x^{\frac{2}{3}})^{-\frac{1}{3}} = 5 \cdot 2^{-\frac{1}{3}} \cdot x^{-\frac{2}{3}}$$

$$1) \quad c = 5 \cdot 2^{-\frac{1}{3}} \quad a = -\frac{2}{3}$$

$$\log(5) + -\frac{1}{3} \cdot \log(2x^{\frac{2}{3}}) = \log(5) + -\frac{1}{3}(\log(2) + \log(x^{\frac{2}{3}}))$$

$$\log(5) + -\frac{1}{3}(\log(2) + 2 \cdot \log(x))$$

$$m = -\frac{2}{3} \quad b = \log(5) - \frac{1}{3} \cdot \log(2)$$

$$2) \quad g(x) = 10^5 \cdot 2e^{-x/100} = 5 + -x/100(\log(2e))$$

$$5 + -x/100(\log(2)+1)$$

$$b = 5 \quad m = -\frac{1}{100}(\log(2)+1)$$

$$3) \quad h(x) = \left(\frac{10^{2x}}{2^{5x}}\right)^2 = \frac{10^{4x}}{2^{10x}} = \frac{5^4 \cdot 2^4 \cdot 5^x \cdot 2^x}{2^6 \cdot 2^{10x}} = \frac{5^4}{2^2} \cdot 5^x$$

$$\log(4/2) + 4 \cdot \log(5) + x \cdot \log(5)$$

$$m = 1 \cdot \log(5) \quad y = \log(4/2) + 4 \cdot \log(5)$$