Aufgabe 3

a) $\frac{5}{\sqrt[3]{2x}} = 5/2x^{\frac{1}{3}} = 5(2x)^{-\frac{1}{3}} = 5 \cdot 2^{-\frac{1}{3}} \cdot x^{-\frac{1}{3}}$

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

$\log(5) + -1/3 \cdot \log(2x^2) = \log(5) + -1/3 \cdot (\log(2) + \log(x^2))$

$\log(5) + -1/3 (\log(2) + 2 \cdot \log(x))$

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

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

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

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

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

$\log(1/2) + 4 \cdot \log(5) + x \cdot \log(5)$

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