3a) (i) $f(x) = \frac{5}{\sqrt[3]{2x^2}}$

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

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

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

Steigung (m)

$m = -\frac{2}{3} \cdot \log(x)$

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

(ii) $g(x) = 10^5 \cdot (2e)^{-\frac{x}{100}}$

$\log(y) = 5 + \log\left(2e^{-\frac{x}{100}}\right)$

$= 5 - \frac{x}{100} \cdot \log(2e)$

$m = -\frac{1}{100} \cdot \log(2e)$

$c = 5$

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

$\log(y) = 4x \cdot \log(5) - 6x \cdot \log(2) = m$