(2) $\rho = 8930 \frac{kg}{m^3}$

$^{63}Cu \quad w_1 = 0,691 \quad \sigma_1 = 4,5$ barn

$^{65}Cu \quad w_2 = 0,309 \quad \sigma_2 = 2,2$ barn

$A = 63,546 \frac{kg}{kmol} =$ [illegible]

$\sigma = w_1 \cdot \sigma_1 + w_2 \cdot \sigma_2 = 0,691 \cdot 4,5 + 0,309 \cdot 2,2 = 3,7893$ barn

$n_j = \frac{\rho}{A} N_A = 8,4628 \cdot 10^{28} \; m^{-3}$

$\Sigma = \sigma \cdot n_j = \underline{\underline{32 \; m^{-1}}}$

$\lambda = \frac{1}{\Sigma} = \underline{\underline{0,0313 \; m}}$

$N_0 - N = N_0 (1 - e^{-n_j \sigma x})$

a) $x = 0,5$ mm

$N_0 - N = 1 \cdot (1 - e^{-8,4628 \cdot 10^{28} \cdot 3,7893 \cdot 10^{-28} \cdot 5 \cdot 10^{-4}}) = 0,0159 = 1,59\%$

b) $x = 2$ mm

$N_0 - N = 6,21\%$

c) $x = 10$ mm

$N_0 - N = 27,4\%$