

Forarbid

1 a) $U = 20$

$U = 20 \text{ mA} = R$

$$R = \frac{U}{I} = \frac{20 \text{ mA}}{0,4} = \underline{\underline{50 \Omega}}$$

1 b) $2^2 = 4096$

$$I = \frac{U}{R} = \frac{4096}{40} = 6,10 \mu A$$

$$\frac{200 \text{ mm}}{16 \text{ mA}} = 6,10 \mu A = 0,26 \text{ mm i høyde}$$

$$R \cdot \left(\frac{400 \text{ mm}}{2} \right)^2 = 0,26 \text{ mm} = \underline{\underline{6,53 \mu L}}$$

2 a)

$$\frac{1}{2} \rho v^2 + \rho g z + \mu = k$$

$$\rho [\text{kg/m}^3] \quad v [\text{m/s}] \quad g = 9,81 \text{ m/s}^2 \quad z [\text{m}] \quad \mu [\text{Pa}]$$

$$z = 500 \text{ mm}, \quad v = 0 \text{ m/s}$$

$$\rho g z = k - \frac{1}{2} \rho v^2 - \mu$$

$$z = \frac{k - \frac{1}{2} \rho v^2 - \mu}{\rho g}$$

$$z = \frac{k}{\rho g} - \frac{v^2}{2g} - \frac{\mu}{\rho g}$$

$$\underline{z = \frac{k}{\rho g} - \frac{1}{2g} - \frac{\mu}{\rho g}}$$

3 a)

$$k = 2 \text{ mV/V} \quad F_{\text{max}} = 2,5 \text{ kV} \quad U_{\text{max}} = 15 \text{ V} \quad d = 400 \text{ mm} \quad \rho = 1000 \text{ kg/m}^3$$

$$U_{\text{out}} = \frac{k}{R_0} U_{\text{in}} \cdot F \quad \frac{U_{\text{out}}}{U_{\text{in}}} = \frac{2 \text{ mV}}{\text{V}} \quad ? - 7$$

