① a) $V_{rms} = \frac{V_{max}}{\sqrt{2}} = \frac{325V}{\sqrt{2}} = 230V$

b) $P = U \cdot I$

$I = \frac{P}{U} = \frac{1800W}{230V} = 7,8A$ som er mindre enn 10A så vi kan bruke den

c)

$I(0) = \frac{P}{U} = \frac{180W}{230V} = 0,78A$

$I(\infty) = 0A$

$R_{tot} = \frac{230V}{0,78A} = 295\Omega$

$I(t) = 0,78e^{-\frac{t}{\tau}}$

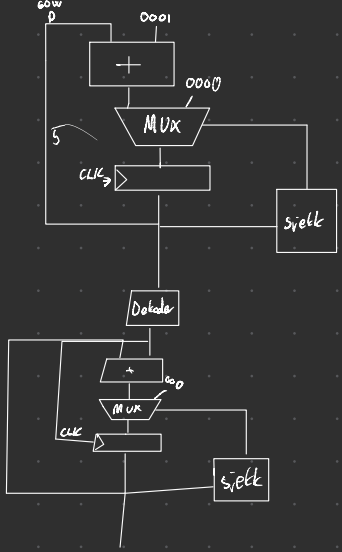
$0,78e^{-\frac{2}{\tau}} = 0,05$

$L = \frac{-3 \cdot 295\Omega}{\ln(\frac{0,05}{0,78})} = 322H$

d) $E = \frac{1}{2}LI^2 = \frac{1}{2} \cdot 322H \cdot (0,05^2 - 0,78^2) = -98,5J$

e)

③ a)

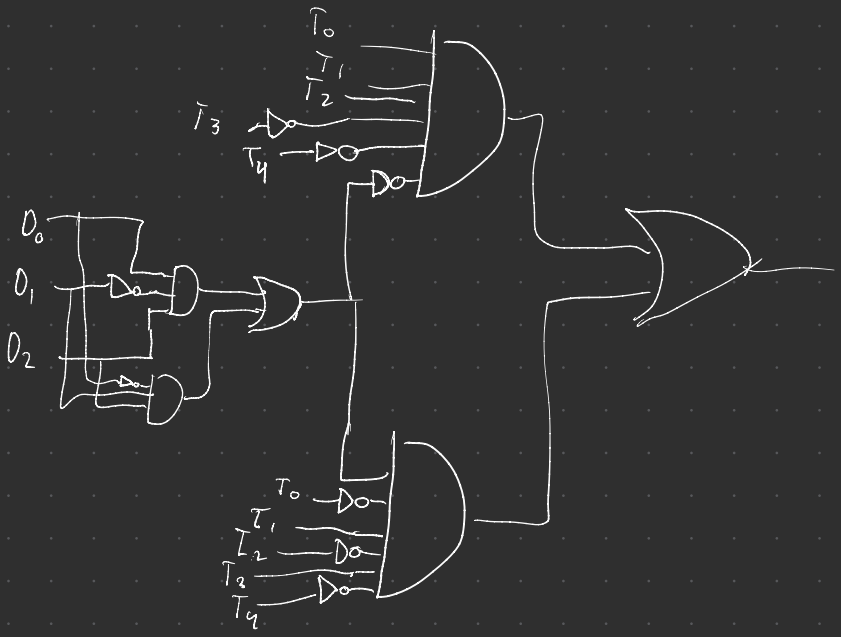


b) $7 = 00111$

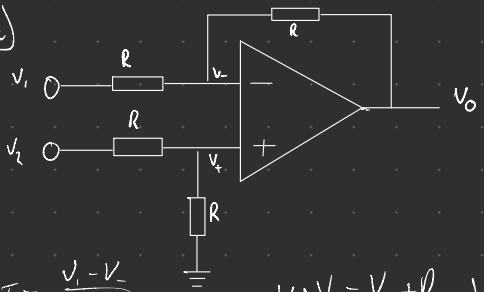
$10 = 01010$

	Q_2	Q_1	Q_0	Q
n	0	0	0	0
t	0	0	1	0
o	0	1	0	0
t	0	1	1	0
tr	1	0	0	0
lø	1	0	1	1
sj	1	1	0	1

$Q = (Q_2 \bar{Q}_1 Q_0) + (Q_2 Q_1 \bar{Q}_0)$



(3) a)



i) $I_{R_1} = \frac{V_1 - V_-}{R}$

$I_{R_2} = \frac{V_- - V_o}{R}$

$V_- = V_+ = \frac{V_2 + R}{R+R} = \frac{V_2}{2}$

$\frac{V_1 - \frac{V_2}{2}}{R} = \frac{\frac{V_2}{2} - V_o}{R} \Rightarrow V_1 - \frac{V_2}{2} = \frac{V_2}{2} - V_o$

$V_o = V_2 - V_1$

ii) Subtraherer. kan være nyttig om du ønsker å ha et bestemt spenningsnivå i en krets