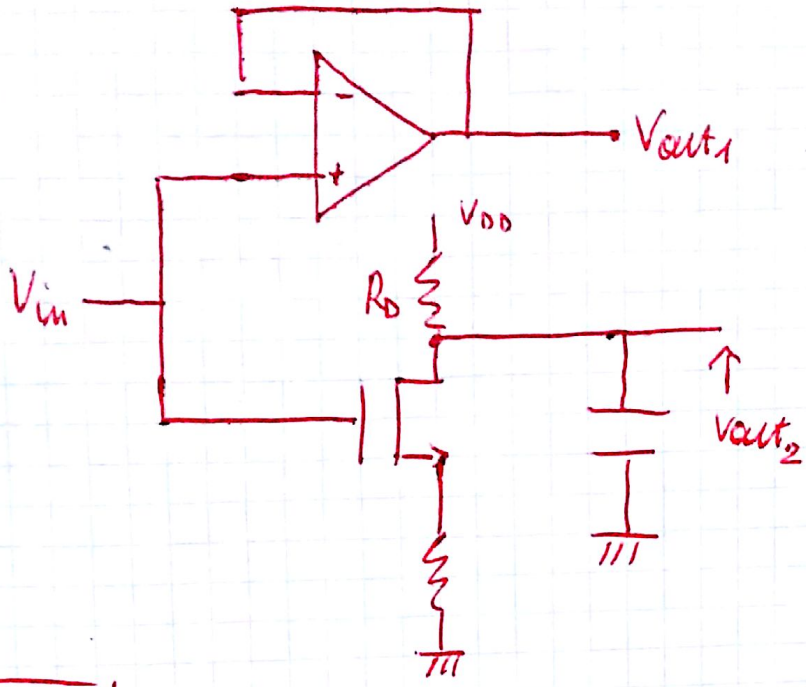
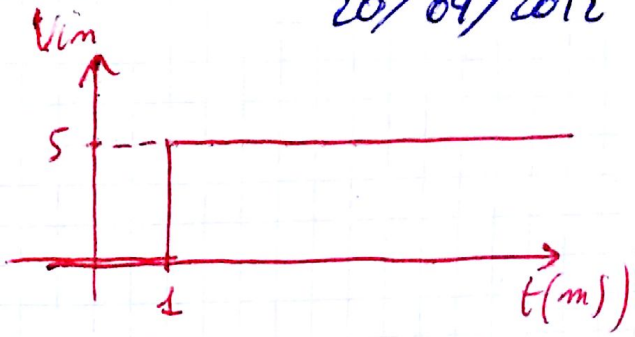
20/09/2012





t < 1 $V_G = 0$ $V_S = R_S I_D \Rightarrow V_{GS} = -R_S I_D < 0 \Rightarrow$ TRANSISTOR INTERDETTO

↳ $V_{out2} = 0$, $V_{out1} = 0$

t > 1

$V_G = 5V$. $V_S = R_S I_D$ $I_D = (5 - R_S I_D - 1)^2 \cdot K = \frac{1}{2}(4 - I_D)^2$

$I_D^2 - 10 I_D + 16 = 0$

$I_D = 8mA \rightarrow V_{GS} = -3 < 0$ IMPOSSIBILE

$I_D = 2mA \rightarrow V_{GS} = 3V$ ED INOLTRE

$V_{DS} = V_{DD} - R_D I_D = 6 > V_{GS} - V_T$

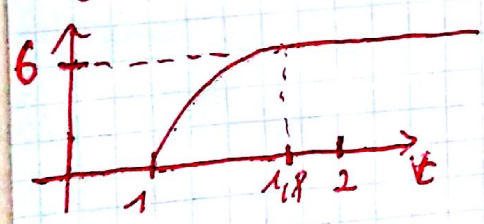
VERIFICATA IPOTESI SATURAZIONE

PER IL CONDENSATORE

$V(\infty) = V_{DS} = V_{DD} - R_D I_D = 6V$

$V(0) = 0$

$\tau = R_2 C = 0{,}2ms$



CHE È V_{out2}

$V_{out1} = 5V$ (INSEGUITORE DI TENSIONE)

$V_{out2} - V_{out2} = 5 - 6 + 6\,e^{-\left(\frac{t-t_0}{\tau}\right)}$