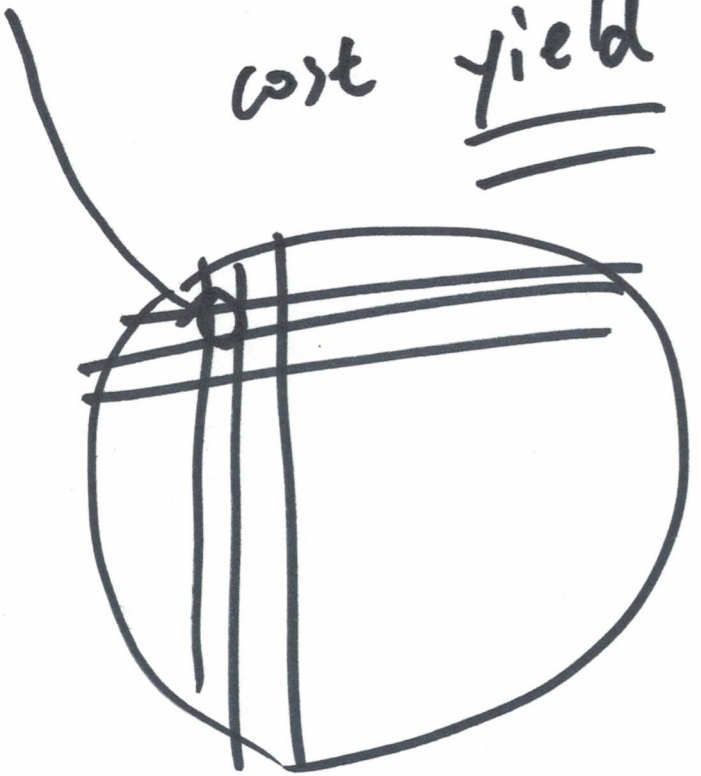
→ muse MPW

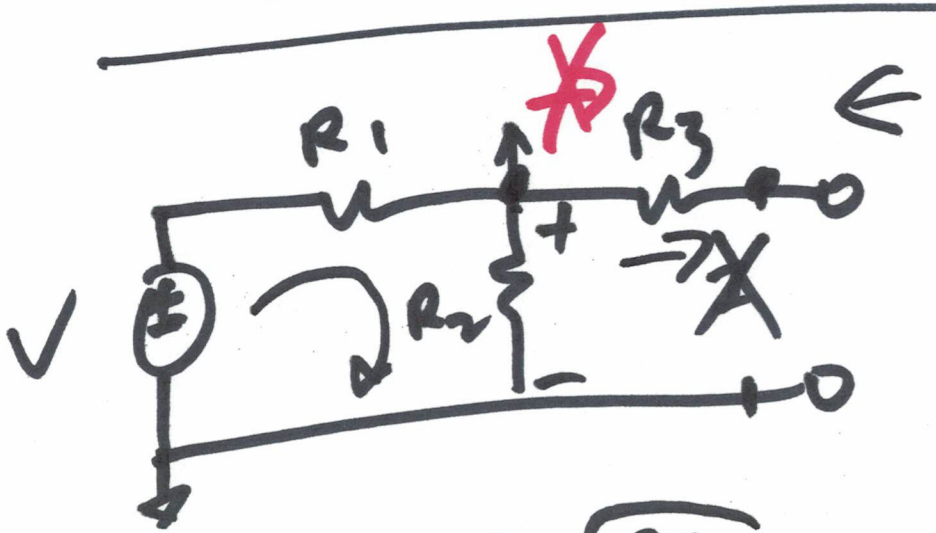
TSMC

$61K / Design

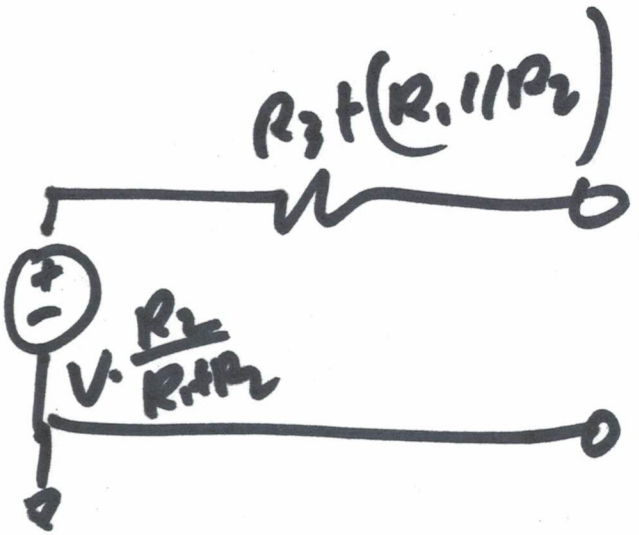
cost yield



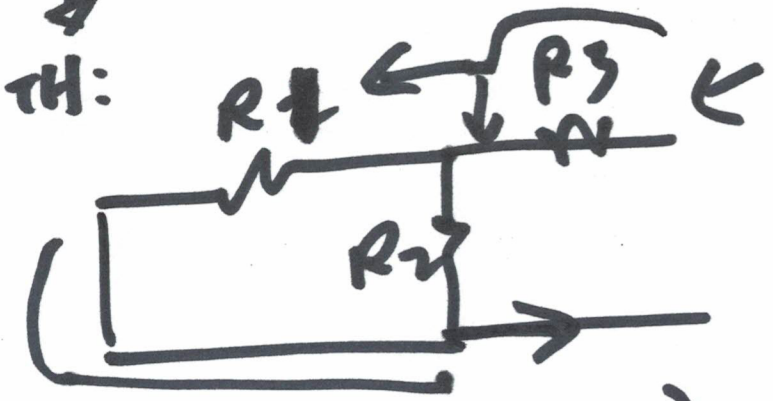
Thevenin's equivalent circuit:



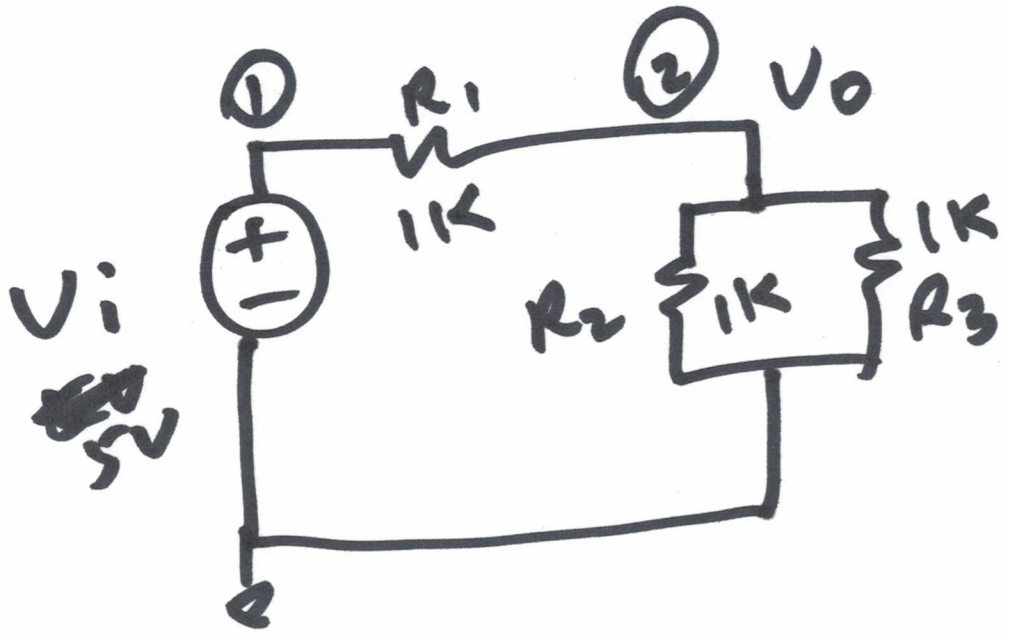
V_{TH}: $V_{TH} = V \cdot \frac{R_2}{R_1+R_2}$



R_{TH}:



$R_{TH} = R_3 + (R_1 // R_2)$



transient.

0 – 1 s

Vi 1 0 5V

R1 1 2 1K

R2 2 0 1K

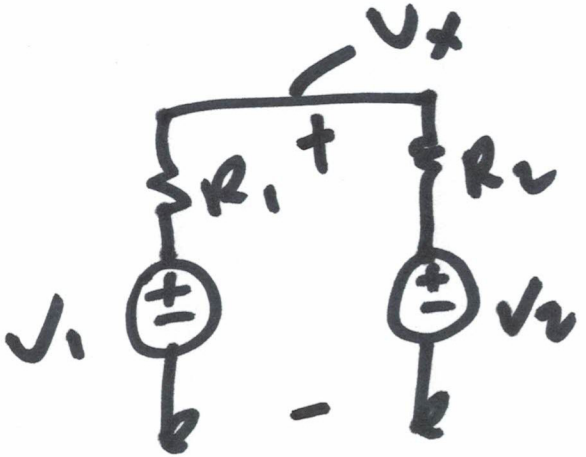
GND

R3 2 0 1K

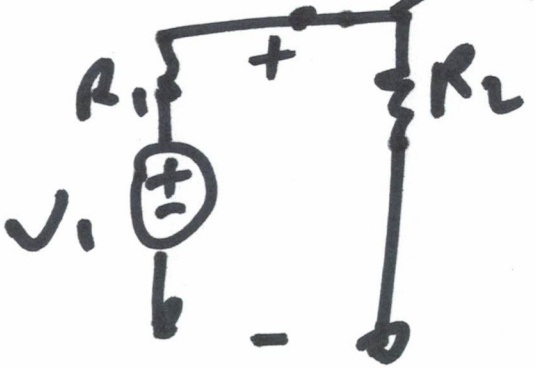
.tran 0 1 0.00

second

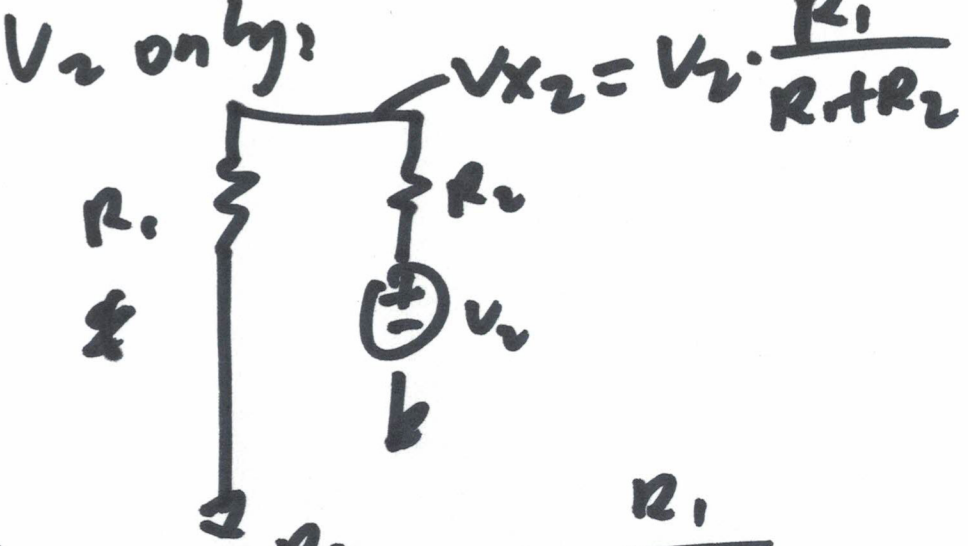
Superposition:



V_1 only:



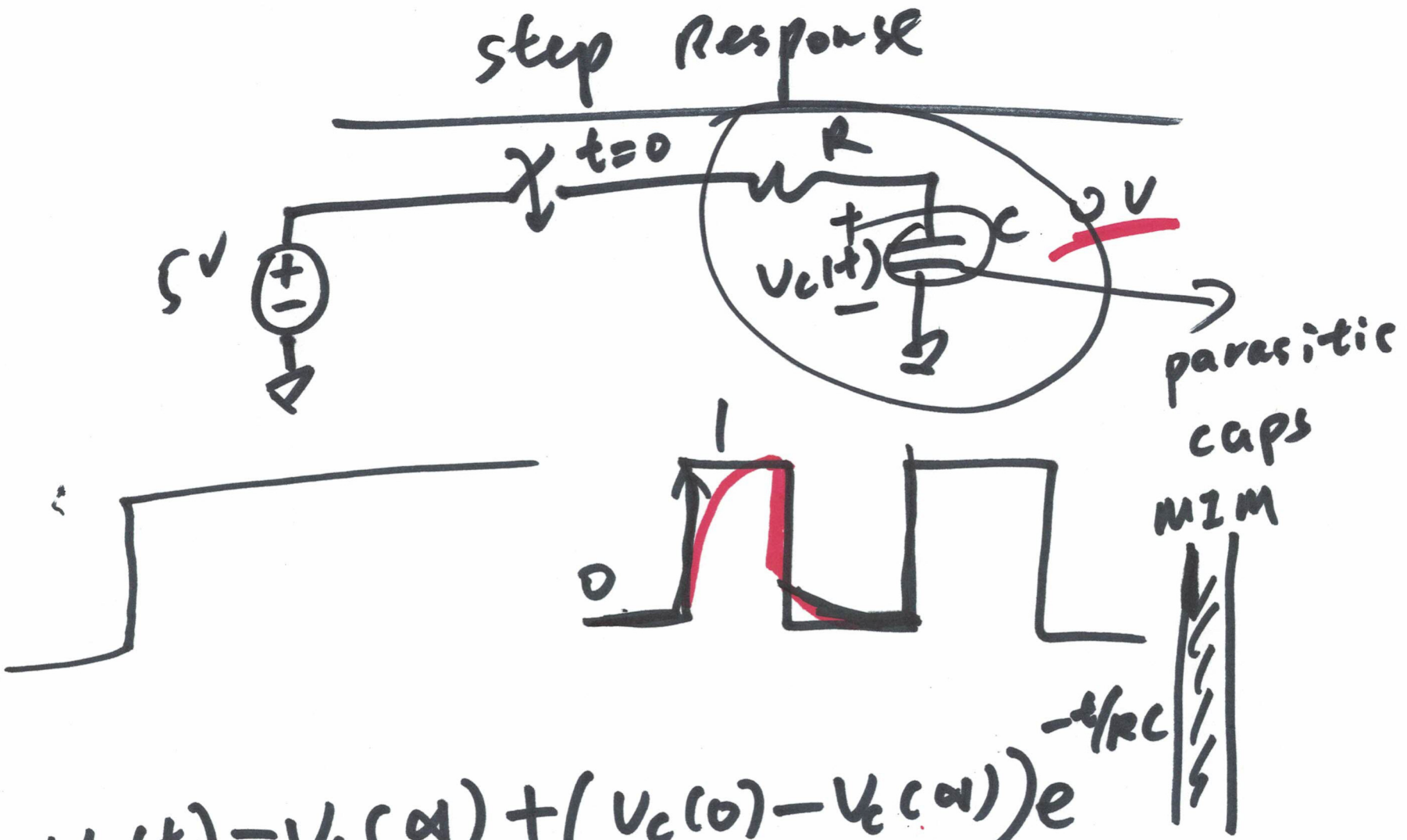
V_2 only:



$$V_x = V_{x_1} + V_{x_2} = V_1 \cdot \frac{R_2}{R_1+R_2} + V_2 \frac{R_1}{R_1+R_2}$$

④

Step Response



$$V_c(t) = \underbrace{V_c(\infty)}_{5} + (V_c(0) - V_c(\infty))e^{-t/RC}$$

$$= 5 - 5(e^{-t/RC}) = 5(1 - e^{-t/RC})$$