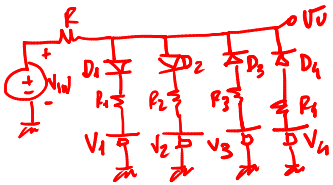
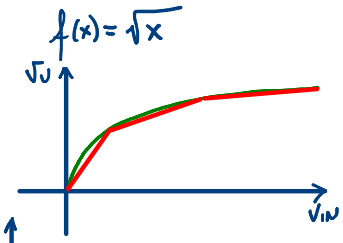
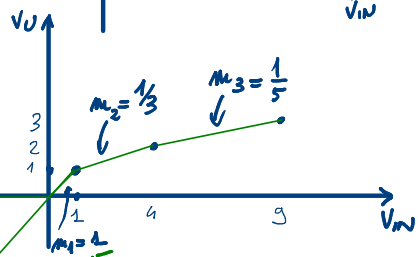
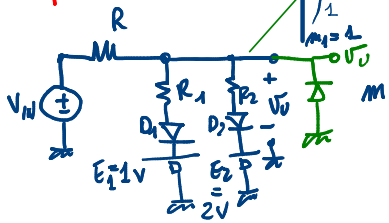




V_{IN}	V_U
1	1
4	2
9	3

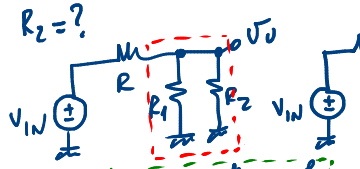


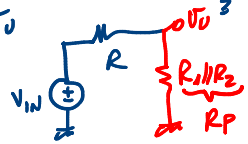


$$m_2 = \frac{R_1}{R+R_1} = \frac{1}{3}$$

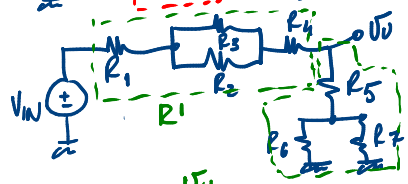
$$\frac{\frac{R}{2}}{R+\frac{R}{2}} = \frac{R/2}{3R/2} = \frac{R}{3R} = \frac{1}{3}$$

$R_2 = ?$





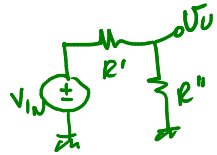
$$\sqrt{U} = \frac{R_P}{R_P+R} V_{IN} = \frac{R_1 \| R_2}{R_1 \| R_2 + R} V_{IN}$$



$$R' = R_1 + R_2 \| R_3 + R_4$$

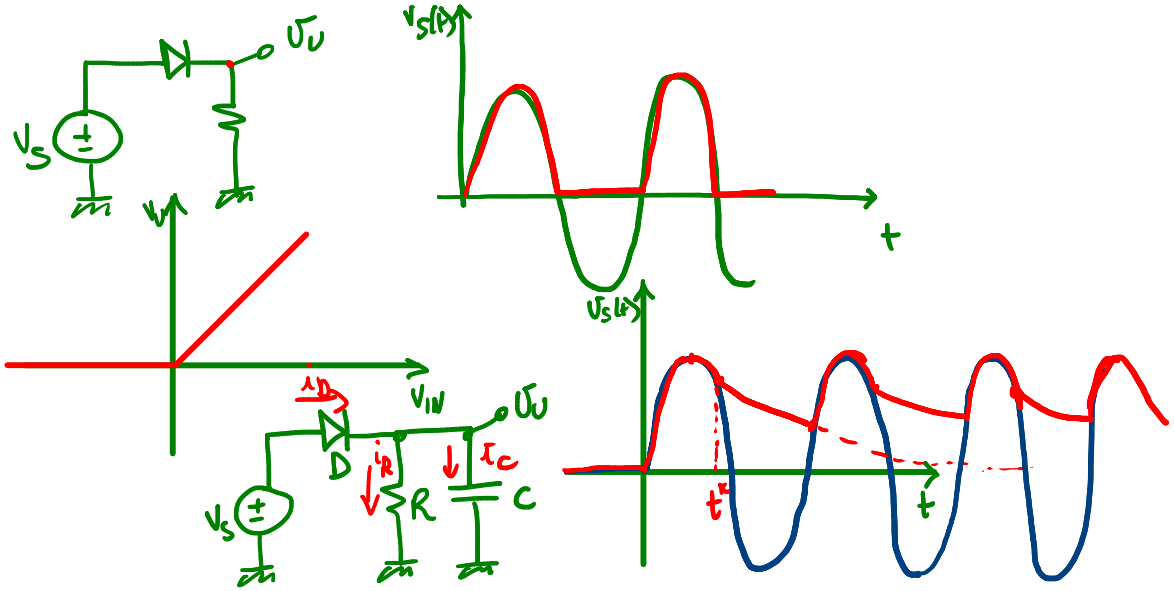
$$R'' = R_5 + R_6 \| R_7$$

$$(R_1 \| R_2) \| R_3 = R_1 \| (R_2 \| R_3)$$

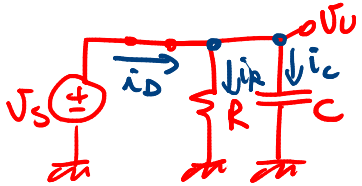


$$\sqrt{U} = \frac{R''}{R'+R''} V_{IN}$$

$$\frac{R_1 \| R_2}{R_1 \| R_2 + R} = m_3 = \frac{1}{5}$$



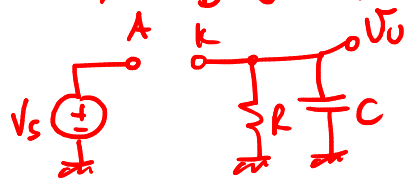
Se D è ON $\Rightarrow v_U = v_S$



$$i_D = i_R + i_C = \frac{v_S}{R} + C\frac{dv_U}{dt} = \frac{v_S}{R} + C\frac{dv_S}{dt} > 0$$

$$t^*: \frac{v_S(t^*)}{R} + C\left.\frac{dv_S(t)}{dt}\right|_{t=t^*} = 0$$

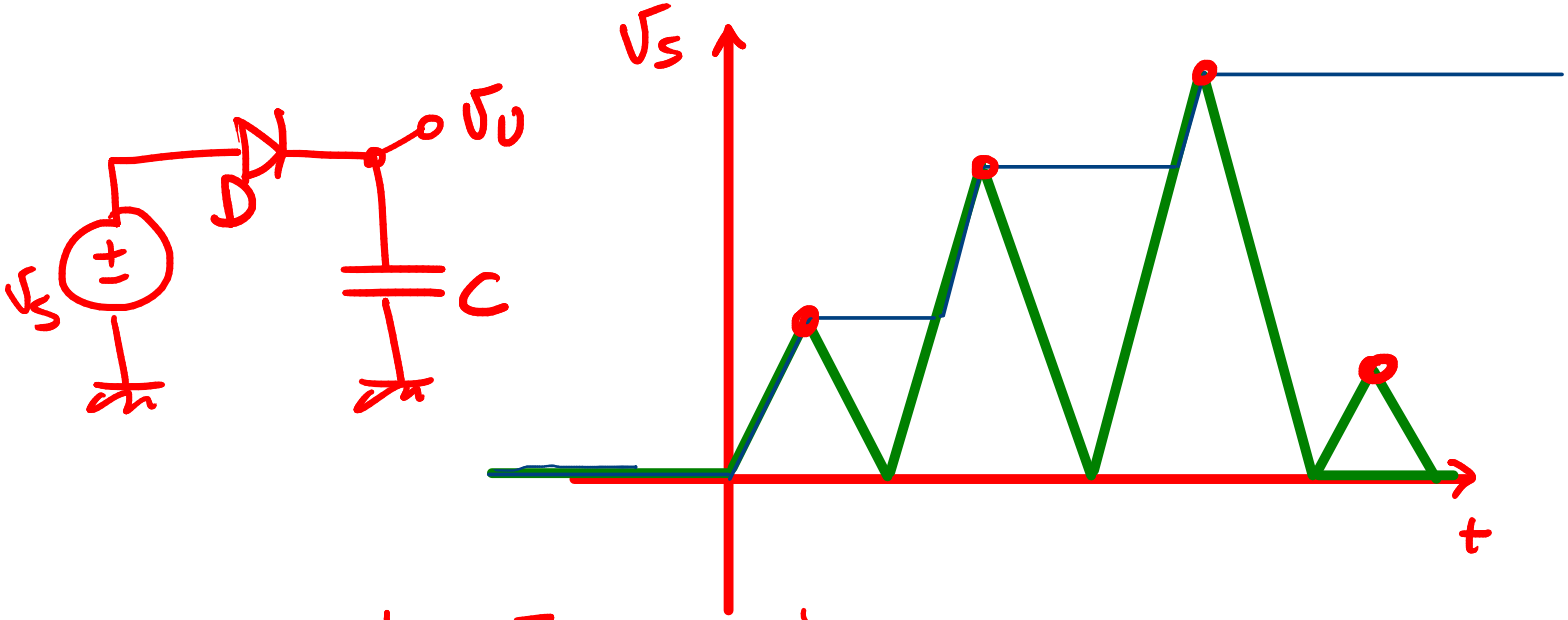
Per $t \geq t^*$ D è OFF



per $t = t^*$ $v_U = v_S(t^*)$

per $t \geq t^*$ $v_U(t) = v_S(t^*)\, e^{-\frac{(t-t^*)}{\tau}}$

$\tau = RC$



$$V_S(t) = [1 + M_{in}(t)] \sin(\omega t)$$