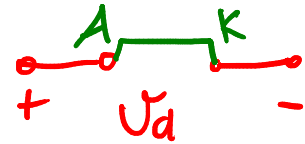
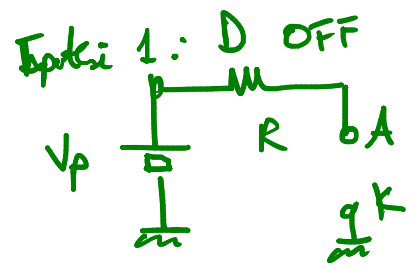
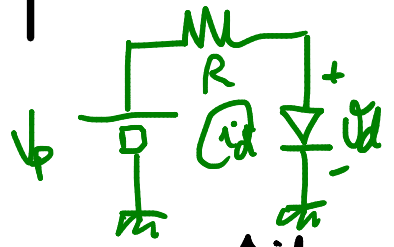
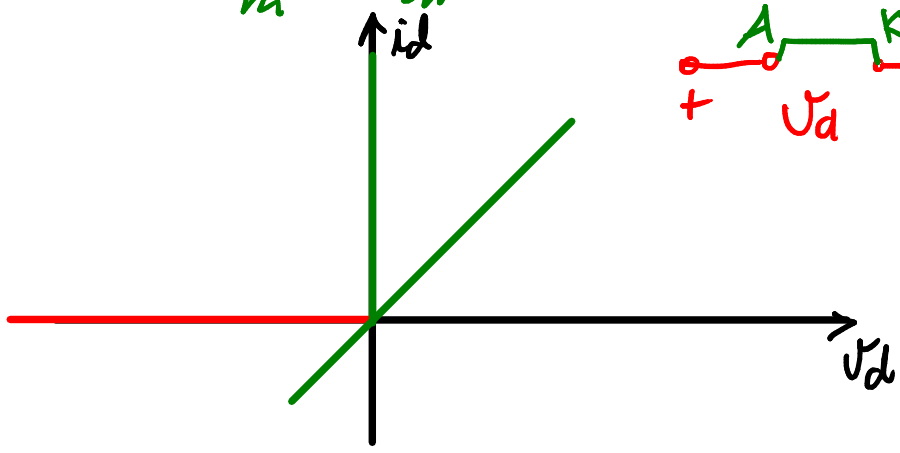
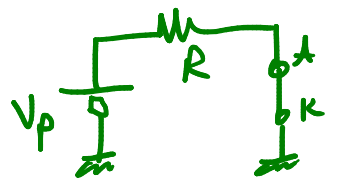
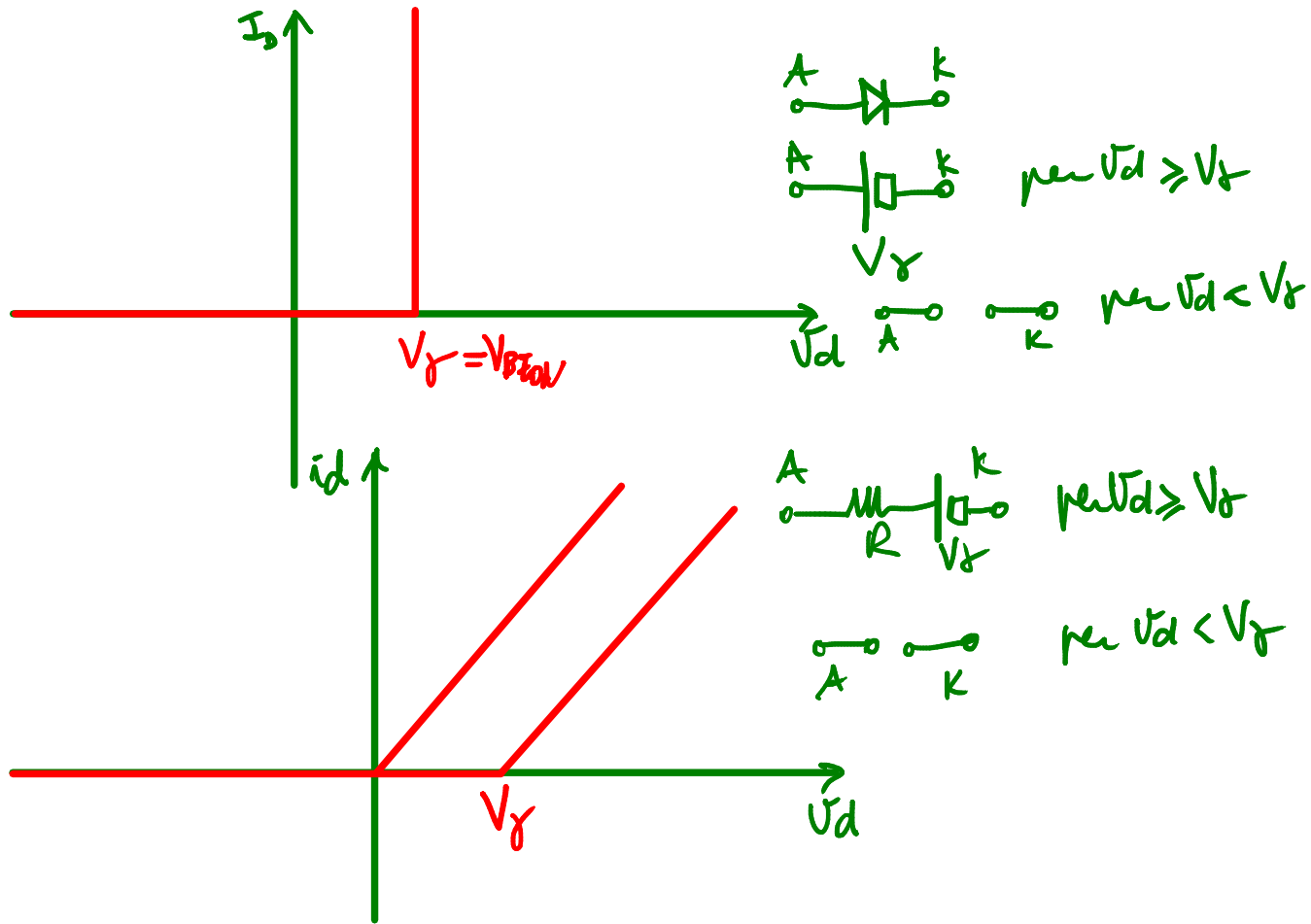


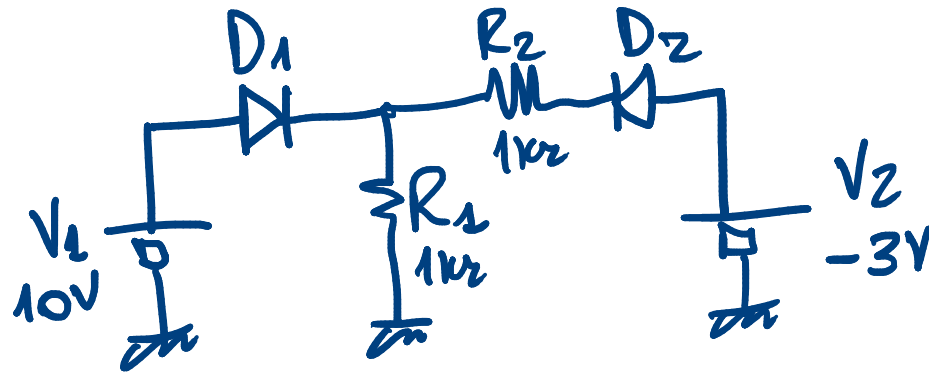
$$\begin{cases} V_p = R i_d + U_d \\ i_d = f(U_d) \end{cases}$$



Etapa 2: D ON

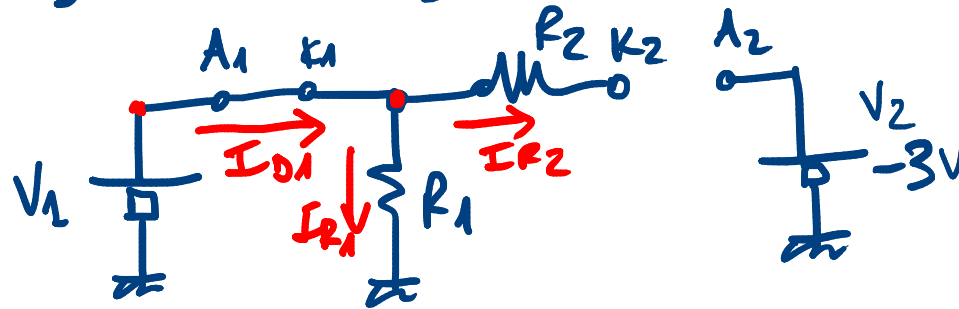






$D_1 \wedge D_2$ ideali
con $V_f = 0V$

Ipotesi: D_1 ON \wedge D_2 OFF

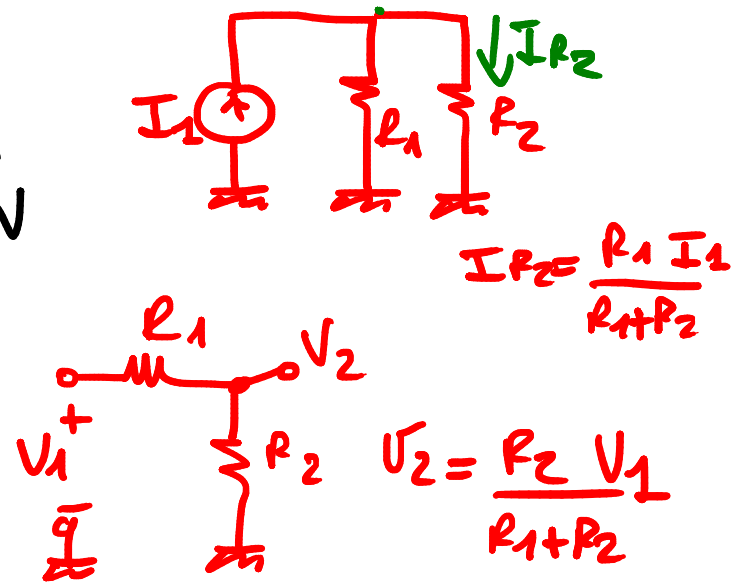
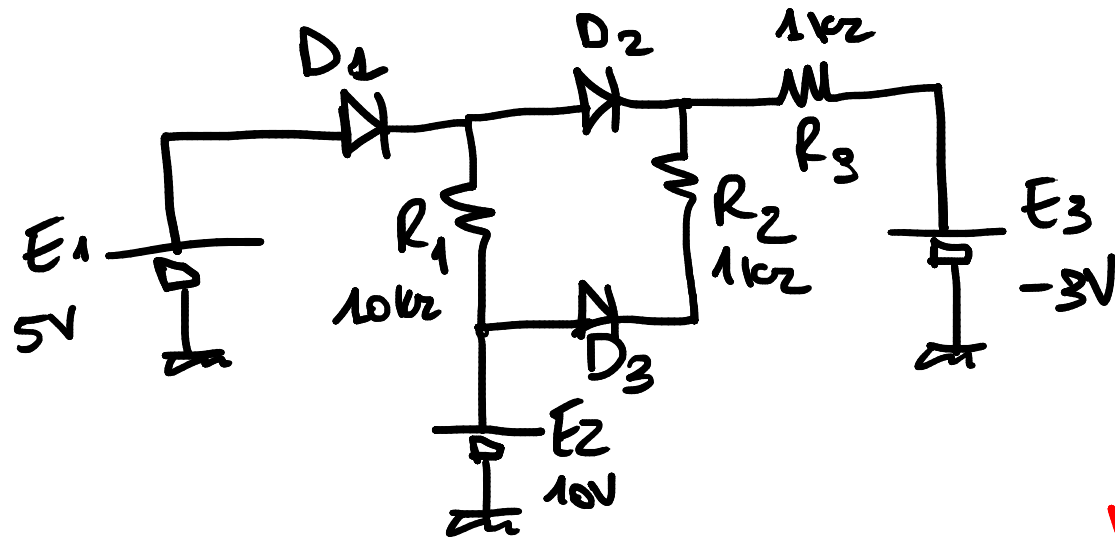


$$I_{D1} = I_{R1} + I_{R2} > 0 \quad I_{R2} = 0A$$

$$I_{D1} = I_{R1} = \frac{V_1}{R_1} = 10mA > 0 \quad D_1 \text{ ON } \bar{e} \text{ verificata}$$

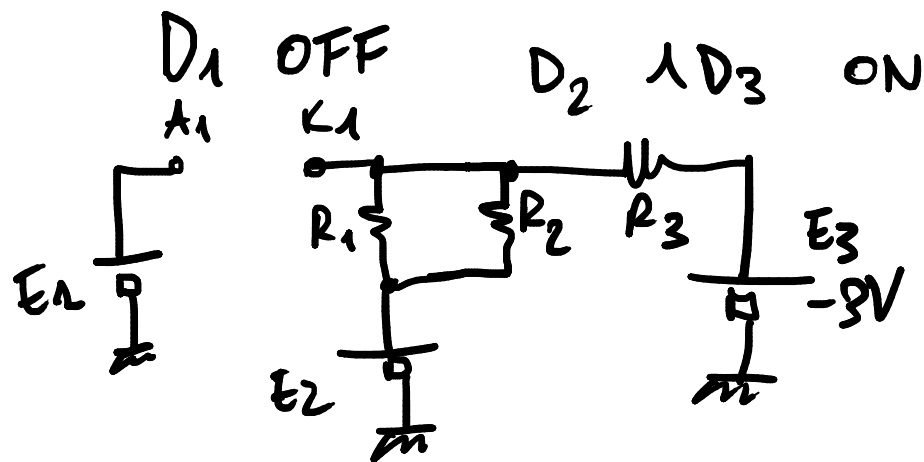
$$V_{A2} = V_2 = -3V \quad V_{K2} = V_{K1} - R_2 I_{R2} = V_{K1} = V_{A1} = V_1 = 10V$$

$$V_{A2K2} = V_{A2} - V_{K2} = -13V < 0V \quad D_2 \text{ OFF } \bar{e} \text{ verificata}$$



$$I_{R2} = \frac{R_1 I_1}{R_1 + R_2}$$

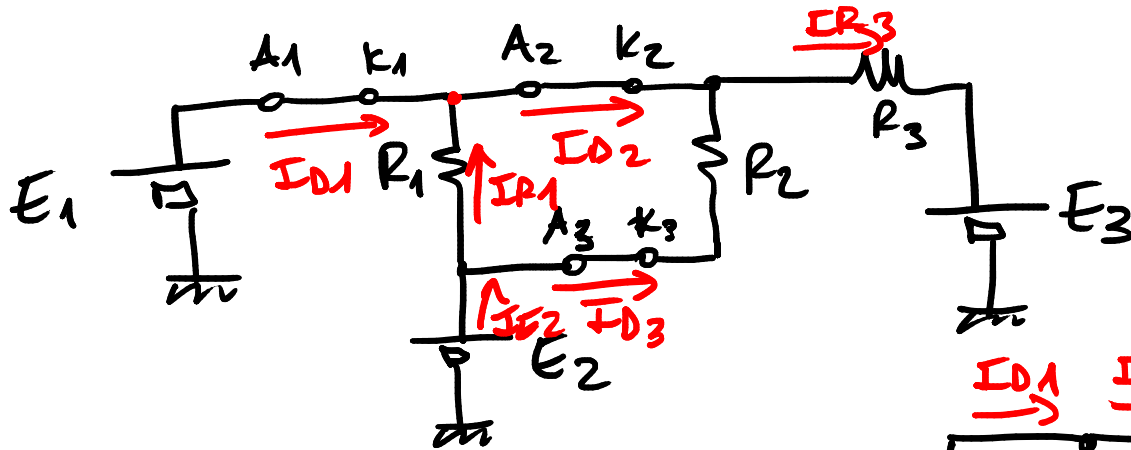
$$V_2 = \frac{R_2 V_1}{R_1 + R_2}$$



$$V_{A1} = 5V$$

$$V_{K1} = \frac{R_3}{R_1 \parallel R_2 + R_3} E_2 + \frac{R_1 \parallel R_2}{R_1 \parallel R_2 + R_3} E_3 < 5V$$

$$V_{A1} > 0$$



$$I_{E2} = \frac{E_2 - E_1}{R_1 \parallel R_2} \approx 5,5 \text{ mA}$$

$$I_{R1} = \frac{E_2 - E_1}{R_1} = 0,5 \text{ mA}$$

$$I_{D3} = I_{E2} - I_{R1} = 5 \text{ mA} > 0 \quad D_3 \text{ ON verificata}$$

$$I_{R3} = \frac{E_1 - E_3}{R_3} = 8 \text{ mA}$$

$$I_{D1} = I_{R3} - I_{E2} = 2,5 \text{ mA} > 0$$

\Downarrow
 $D_1 \text{ ON } \bar{i} \text{ verificata}$

$$I_{D2} = I_{R1} + I_{D1} = 3 \text{ mA} > 0 \quad D_2 \text{ ON verificata.}$$

