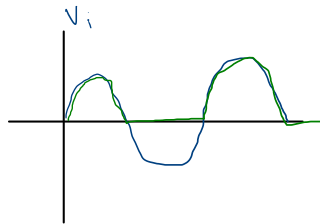
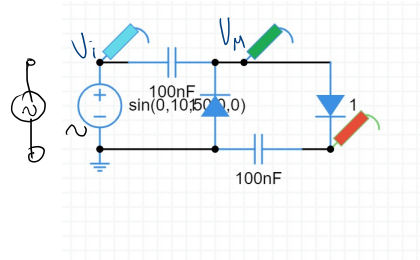
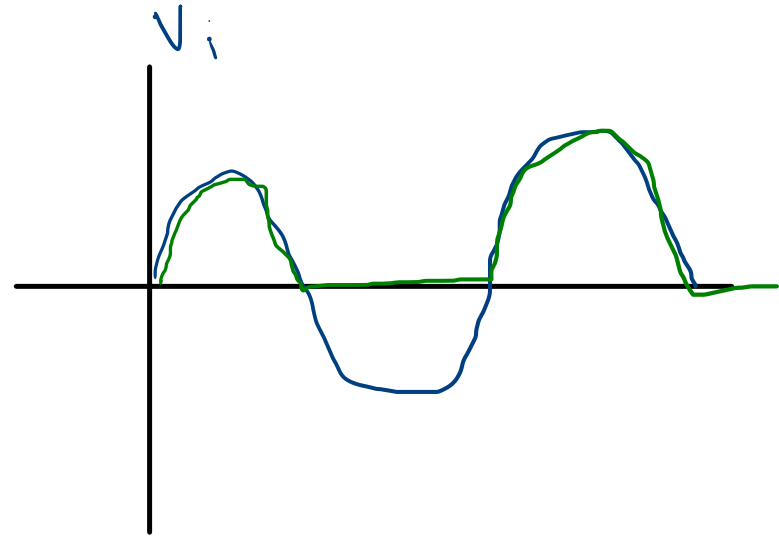
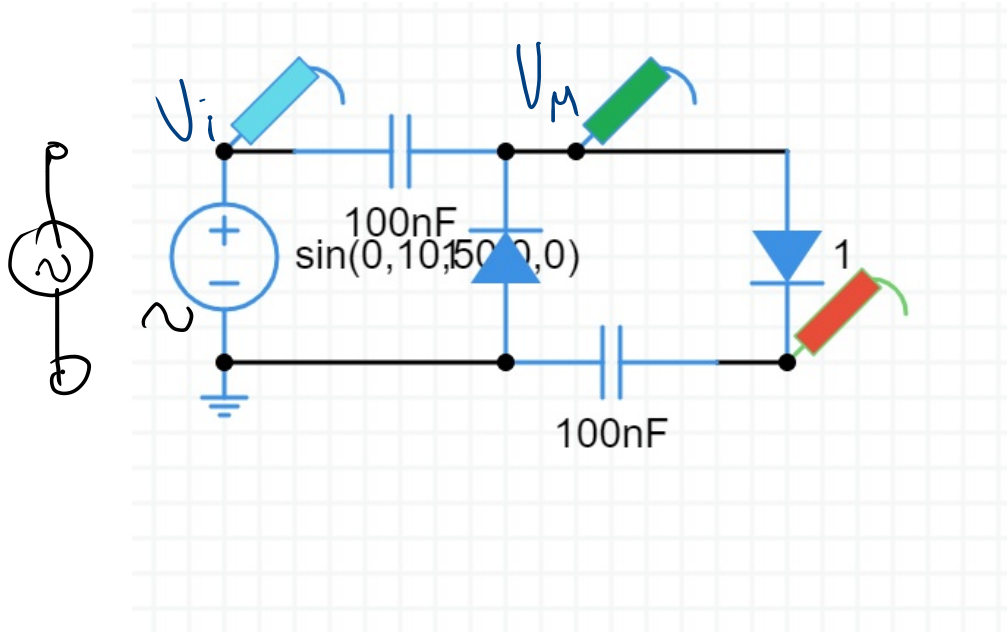


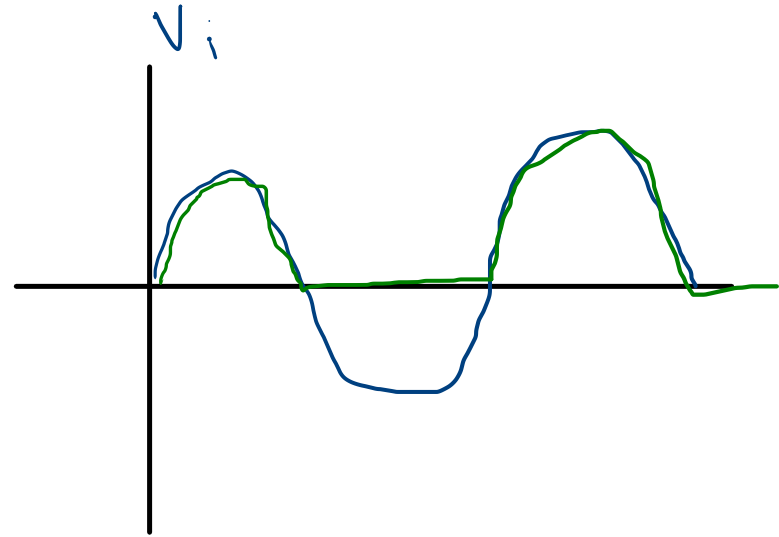
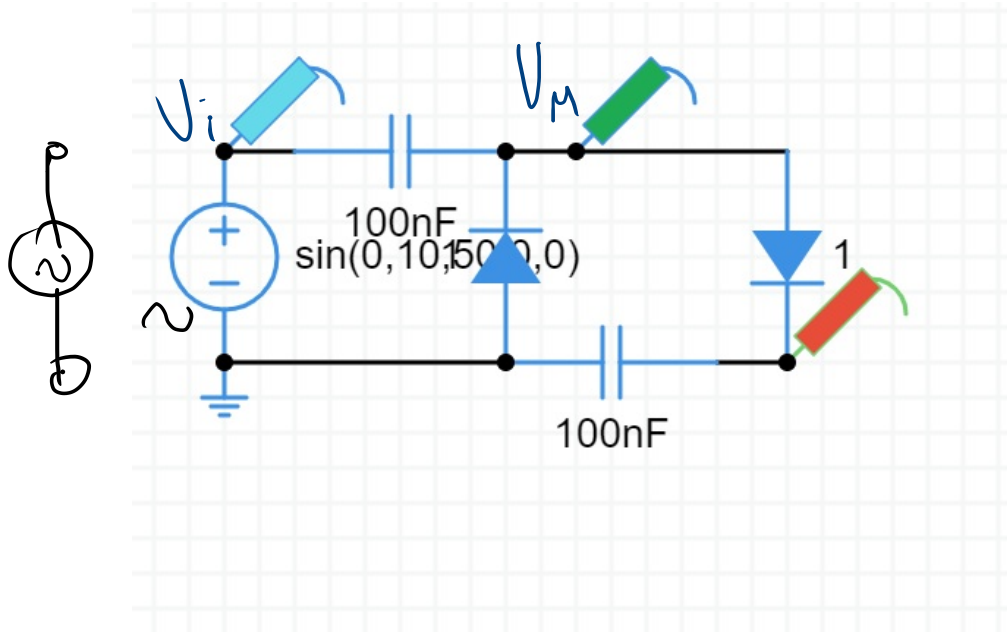
~~Handwritten scribble~~

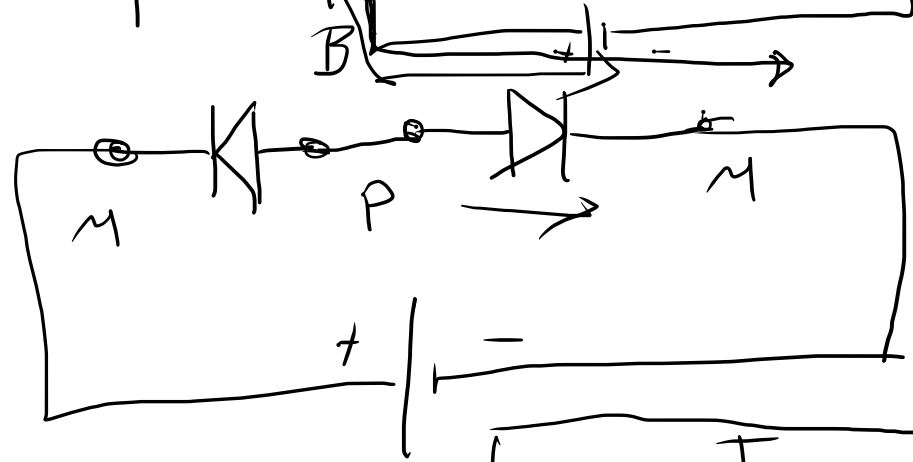


Handwritten sketch of a sine wave with a tilde symbol (~) next to it.



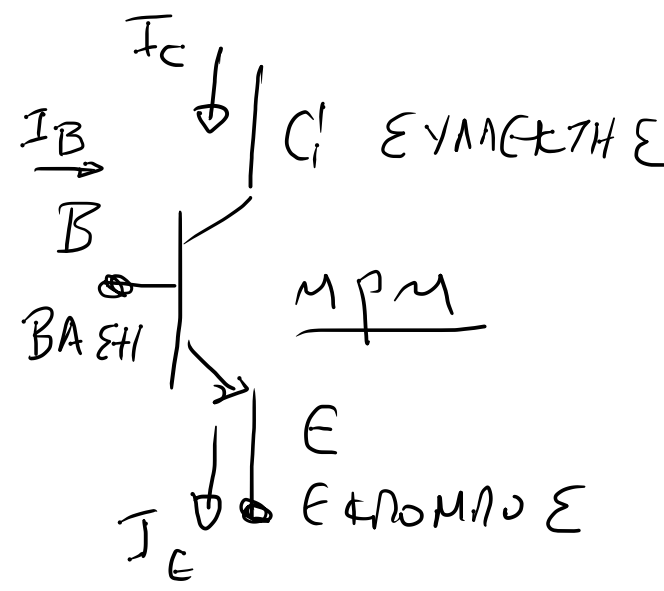
Handwritten sketch of a sine wave with a tilde symbol \sim .



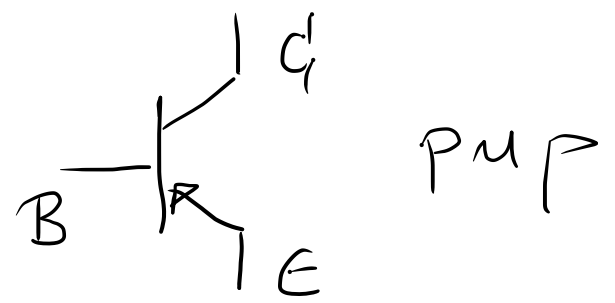


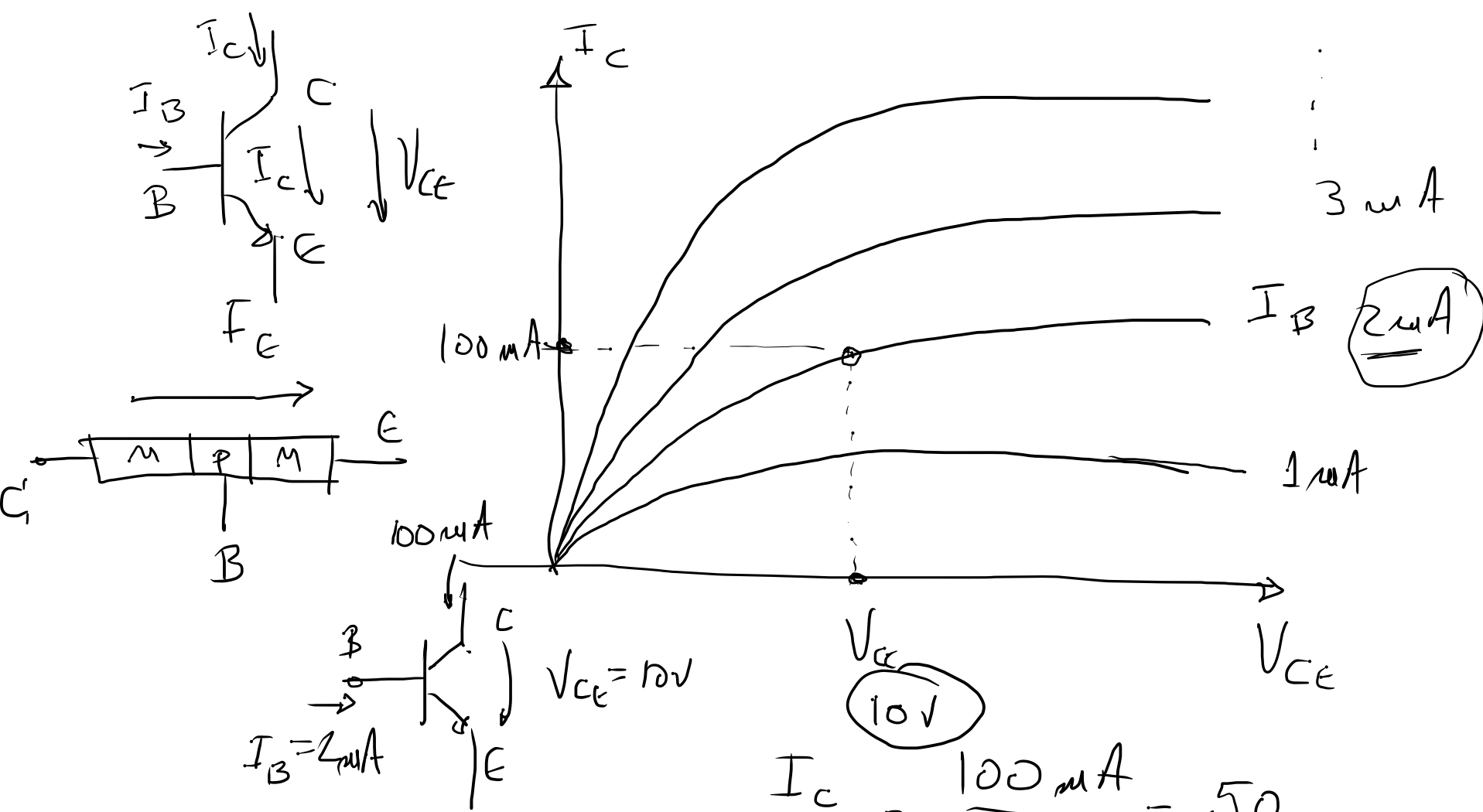
$$1000 > \beta > 10$$

$$\beta = \frac{I_c}{I_B}$$

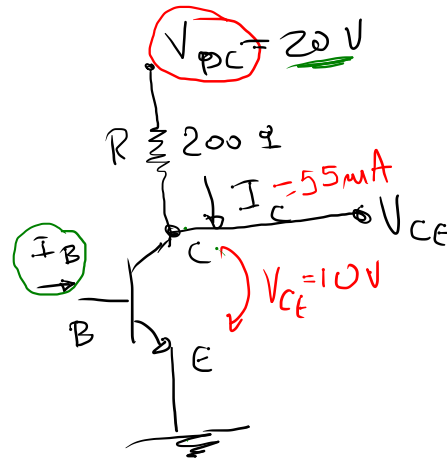
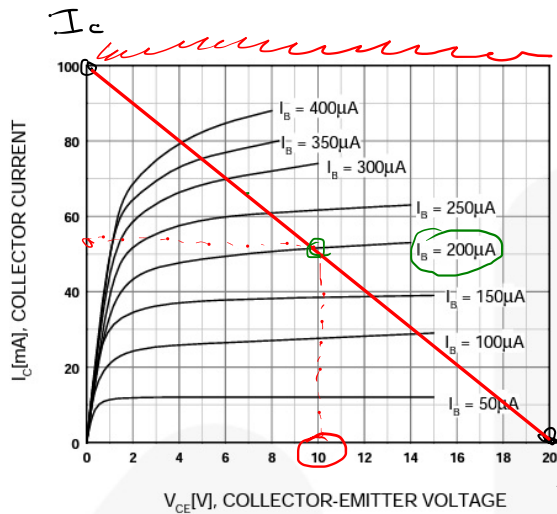


BJT

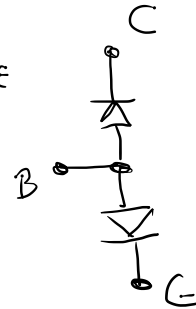




$$\beta = \frac{I_C}{I_B} = \frac{100 \text{ mA}}{2 \text{ mA}} = 50$$



$I_B = 200 \mu A$



$$\beta = \frac{I_c}{I_B} = \frac{55}{0.2}$$

$$= 55 \times 5$$

$$= 275$$

$$P = V_{CE} \cdot I_c + V_{BE} \cdot I_B$$

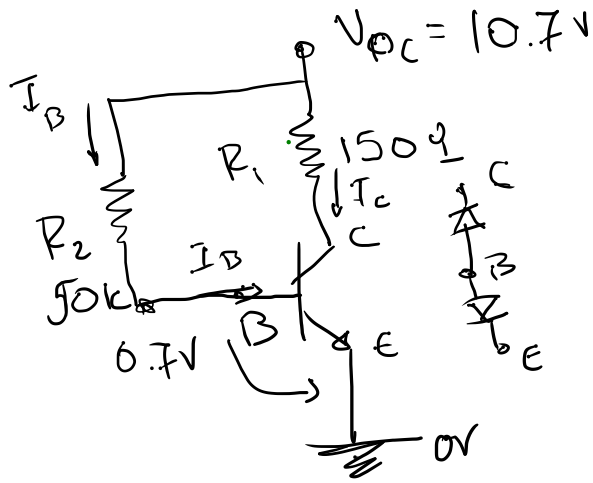
н.д. \times КАТИ МИКРО.

$$V_{PC} = I_c \cdot R + V_{CE}$$

$$20V = I_c \cdot 200\Omega + V_{CE}$$

$$\text{An } I_c = \phi \Rightarrow 20 = V_{CE}$$

$$\text{An } V_{CE} = \phi \Rightarrow I_c = \frac{20}{200} = 0.1A = 100mA$$



$$R_1 = 150 \Omega$$

$$R_2 = 10 \text{ k}\Omega$$

$$10.7 = 150 \Omega \times I_C + V_{CE}$$

$$A \cup I_C = \phi \Rightarrow V_{CE} = 10.7 \text{ V} \quad (1)$$

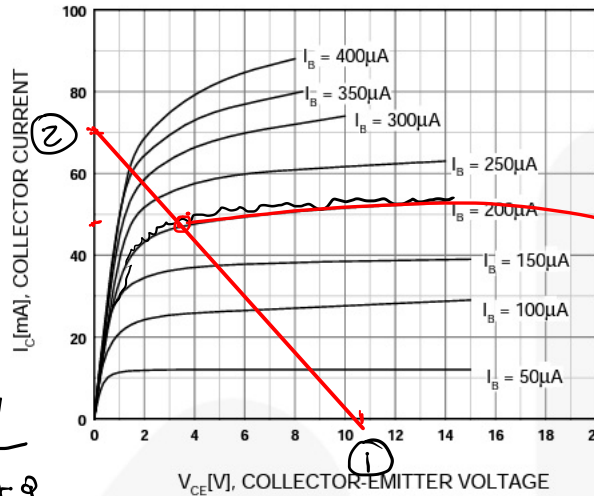
$$A \cup V_{CE} = \phi \Rightarrow I_C = \frac{10.7}{150} = 0.071 \text{ A}$$

$$I_C = 70 \text{ mA} \quad (2)$$

$$0.7 \text{ V} = V_{BE} > \phi$$

$$I_B = \frac{10.7 \text{ V} - 0.7 \text{ V}}{50 \text{ k}\Omega} = \frac{10 \text{ V}}{10 \text{ k}\Omega}$$

$$= \frac{10 \text{ V}}{50 \cdot 10^3 \Omega} = 10^{-3} \text{ A} = 1 \text{ mA} = 0.2 \text{ mA} = 200 \mu\text{A}$$

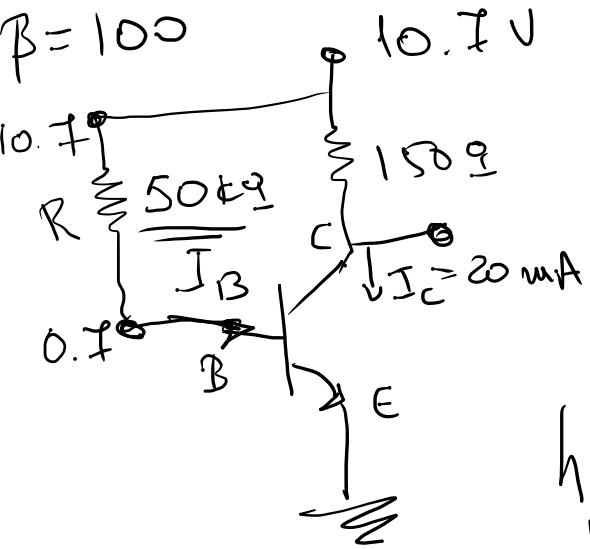


$$V_{CE} = 3.5 \text{ V}$$

$$I_C = 47 \text{ mA}$$

$$\beta = \frac{47 \text{ mA}}{0.2 \text{ mA}}$$

$$\beta = 47 \times 5$$



$$I_C, V_{CE} = ;$$

$$V_B = 0.7\text{V}$$

$$I_B = \frac{10.7 - 0.7}{50\text{k}} = \frac{10}{50\text{k}} = \underline{\underline{200\mu\text{A}}}$$

ΕΣΤΙ ΟΤΙ $I_C = \beta \cdot I_B = 100 \times 0.2\text{mA} = 20\text{mA} \Rightarrow \underline{\underline{I_C = 20\text{mA}}}$

$$10.7\text{V} = I_C \times 150\Omega + V_{CE} \Rightarrow V_{CE} = 10.7\text{V} - 150\Omega \times 20\text{mA}$$

$$= 10.7\text{V} - 3000 \frac{\text{mA} \cdot \Omega}{\text{mV}} =$$

$$3\text{V}$$

$$V_{CE} = 10.7 - 3\text{V} = 7.7\text{V}$$

ΝΑ ΜΕΤΕ ΤΗΝ ΙΔΙΑ ΑΚΗΣΗ ΑΝ $R = 10\text{k}\Omega$