

TP2, suite

Partie 4, suite

on reprend la formule de R_N du TP1. 3.7. (p°3)

$$* r_{CE} = \frac{V_{early}}{I_0} = \frac{50}{280\mu} = 200 \text{ k}\Omega$$

$$* \beta = 100$$

$$* R_E = R_4 = 18 \text{ k}\Omega$$

$$* r_{BE} = \frac{u_T}{I_0} = \frac{\beta u_T}{I_0} = \frac{100 \times 25 \text{ mV}}{280\mu} = 10 \text{ k}\Omega$$

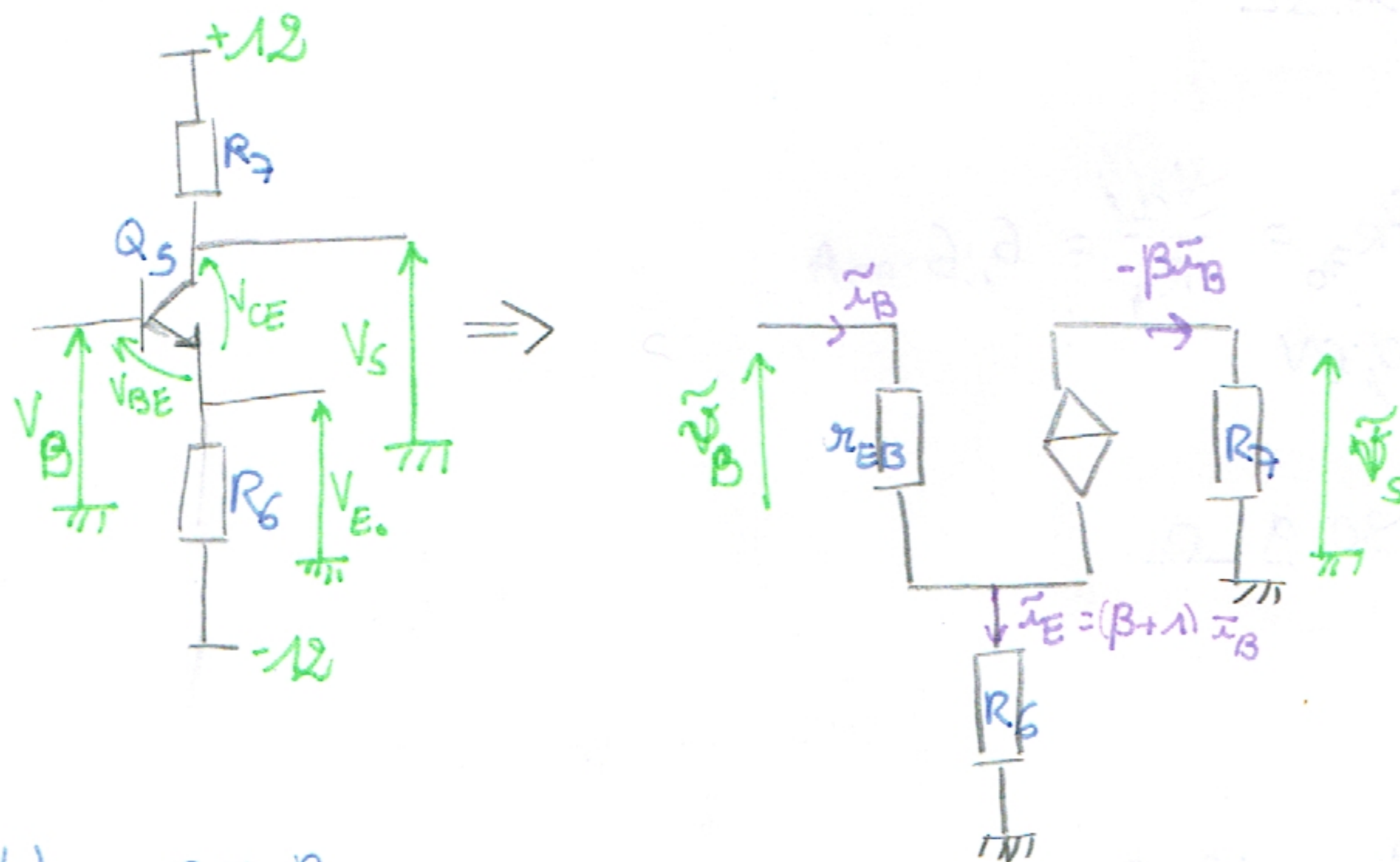
$$\Rightarrow R_N = 13 \text{ M}\Omega$$

$$\text{d'où } A_{MC} = -\frac{R_C}{2R_N} = -\frac{R_2}{2R_N} = -\frac{14,4 \text{ k}}{2 \times 13 \text{ M}} = -5,5 \cdot 10^{-4}$$

$$TRMC = \frac{|A_d|}{|A_{MC}|} = \frac{36}{5,5 \cdot 10^{-4}} \Rightarrow TRMC = 65454 \text{ en dB} \Rightarrow 96,32 \text{ dB}$$

TP3 = étage émetteur communPartie 1 = étage simplifié

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$$* \tilde{v}_S(t) = -\beta \tilde{i}_B R_7$$

$$* \tilde{v}_B(t) = r_{EB} \tilde{i}_B + R_6 \tilde{i}_B (\beta+1)$$

$$\Rightarrow A = \frac{\tilde{v}_S}{\tilde{v}_B} = \frac{-\beta R_7}{r_{EB} + (\beta+1)R_6} \text{ avec } r_{EB} \ll R_6$$

$$A \approx -\frac{\beta R_7}{\beta R_6} \approx -10$$