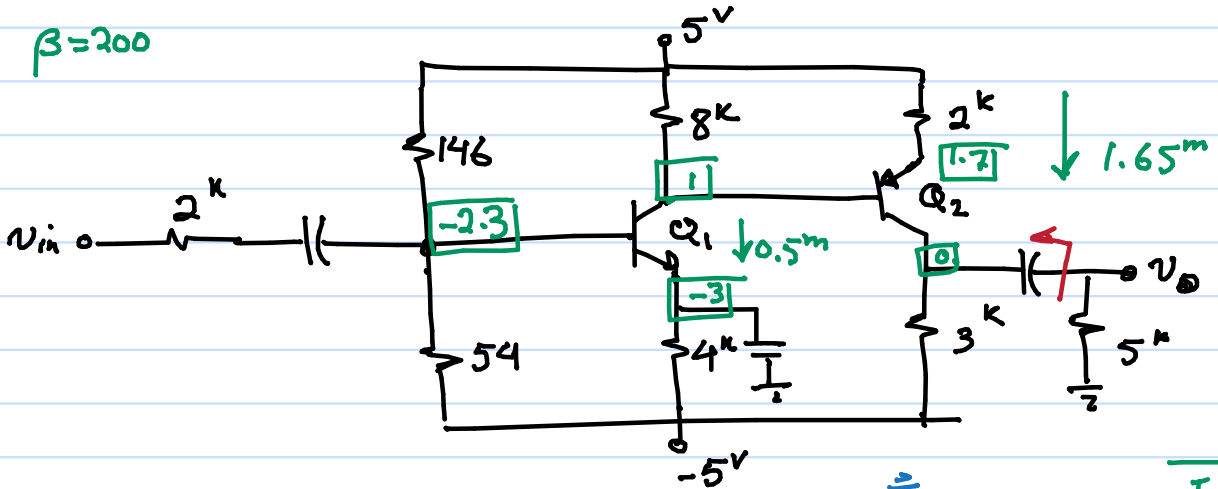
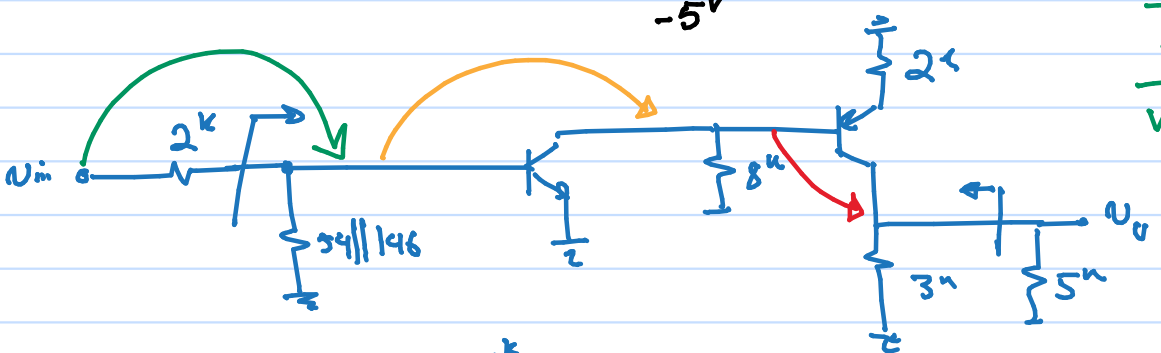
$\beta = 200$



	Q_1	Q_2
I_C mA	0.5	1.65
V_{CE} V	4	-1.75



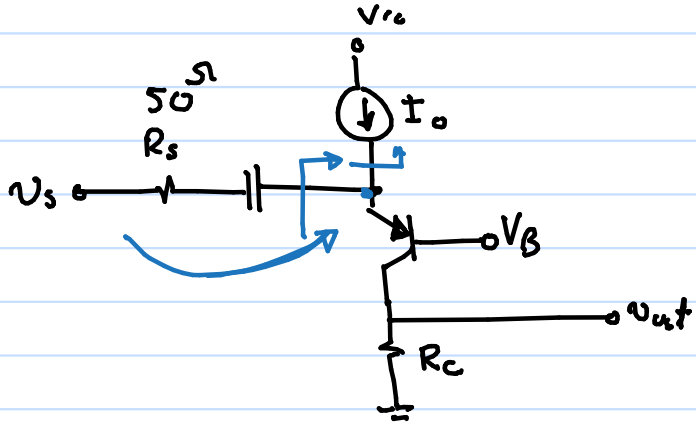
$$\begin{cases} g_{m_1} = 20^m \\ g_{m_2} = 66^m \end{cases}$$

$$\begin{cases} r_{\pi_1} = 10^K \\ r_{\pi_2} = 3^K \end{cases}$$

$$R_{in} = 54 \| 146 \| r_{\pi_1} = 8^K \qquad R_{out} = 3^K \| \infty = 3^K$$

$$\frac{v_o}{v_i} = \underbrace{\frac{R_{in}}{R_{in} + 2^K}}_{\frac{8}{10}} \cdot \underbrace{\left(-g_{m_1} \cdot \left(8^K \| \underbrace{(r_{\pi_2} + 200 \cdot 2^K)}_{\approx 2^K}\right)\right)}_{160} \times \underbrace{\frac{-3^K \| 5^K}{2^K + r_{\pi_2}}}_{-\frac{15}{16}} = 120$$

$$\approx 320$$



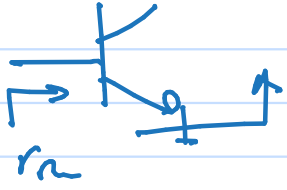
$$r_m = 50 = \frac{V_t}{I_o} \rightarrow I_o = \frac{25^m}{50} = 0.5^m$$

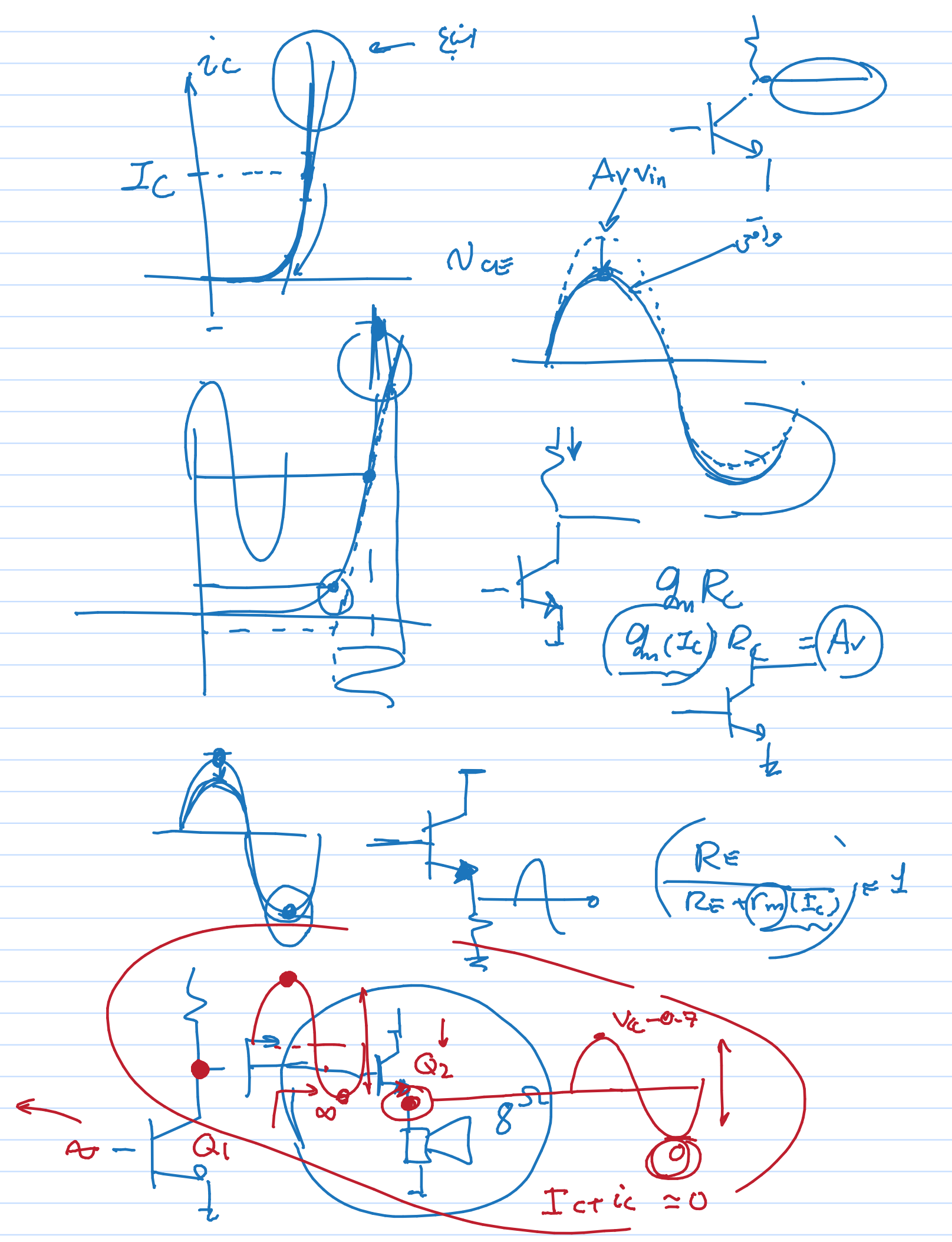
$$A_V = \frac{1}{2} \times g_m R_c$$

$$= \frac{R_c}{2r_m} = \frac{\quad}{100} = 100$$

$R_c = 10^k$

$R_{in} = r_m \| \infty =$




i_C
I_C
N_{CE}
$A_V v_{in}$
واقعی
$g_m R_L$
$g_{m(I_C)} R_L = A_V$
$\frac{R_E}{R_E + r_{m(I_C)}} \approx 1$
Q_1
Q_2
$V_{CC} - 0.7$
$I_{CT} i_C \simeq 0$