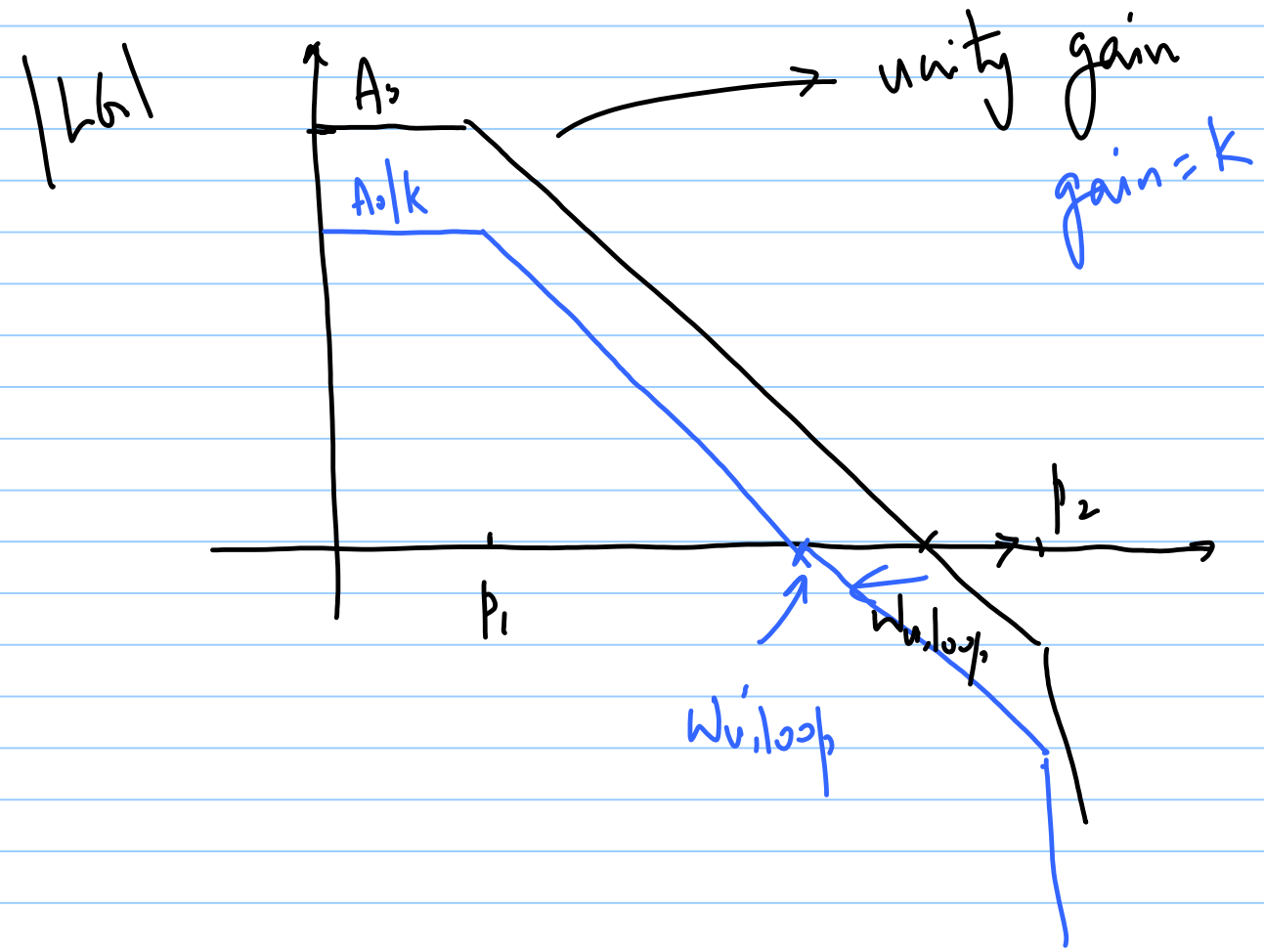
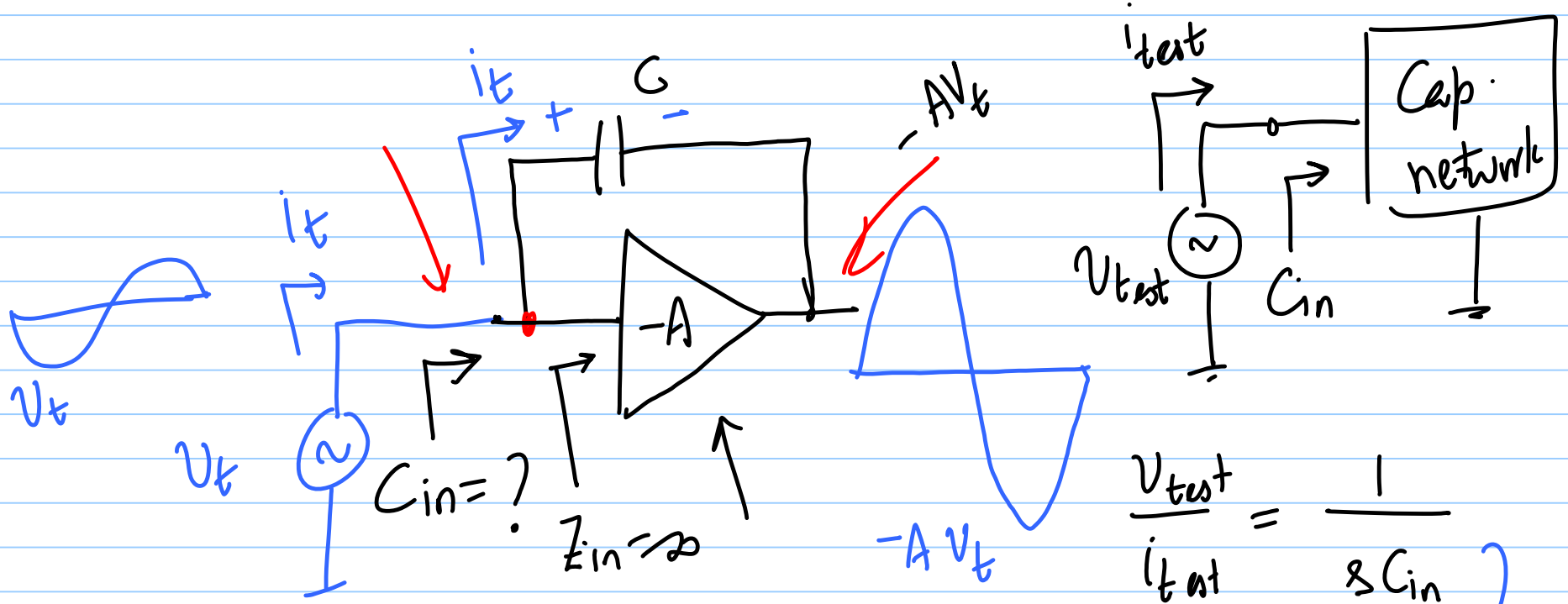
26/02/2019

Lecture 21



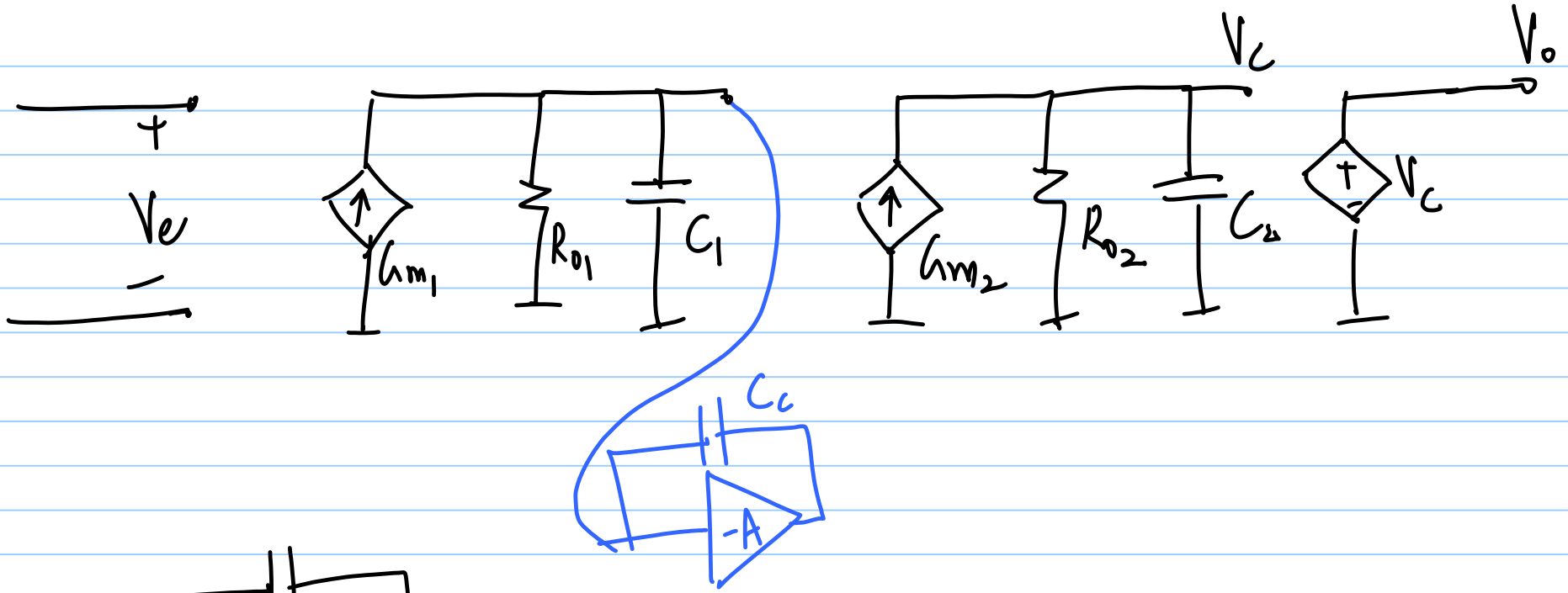
Wd ⇒ $C_{total.} = 80nF$

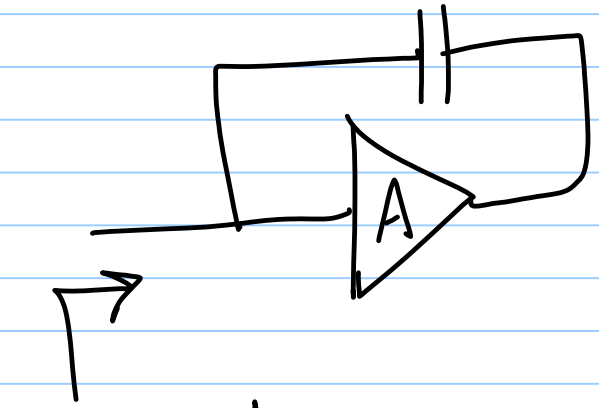


$$\frac{V_{test}}{i_{test}} = \frac{1}{sC_{in}}$$

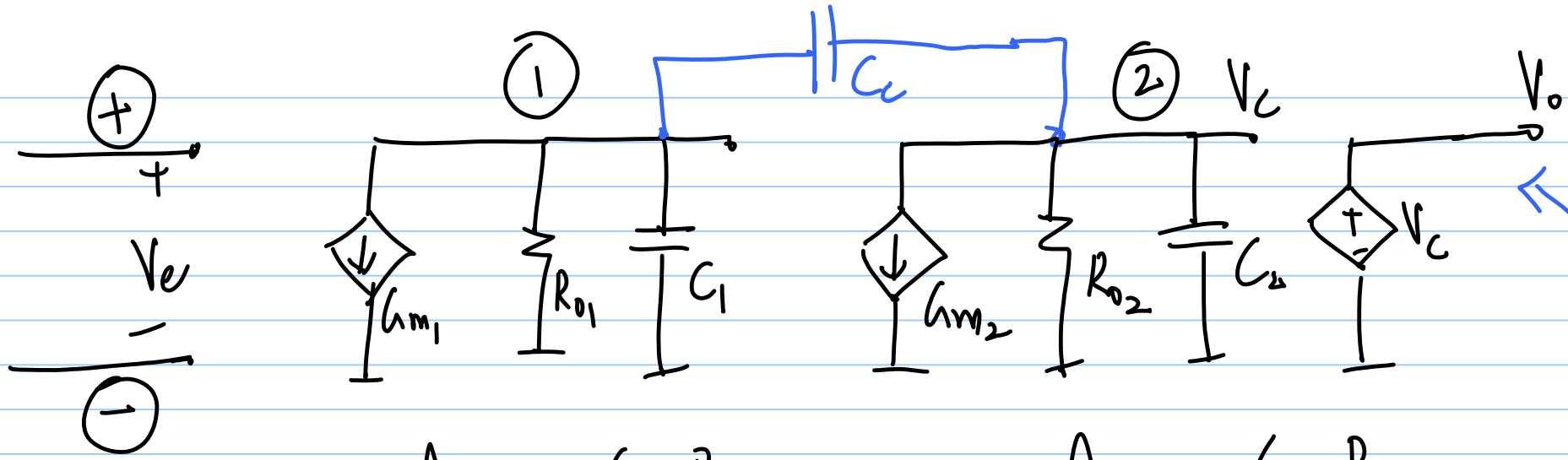
"Miller Effect"

$$i_t = sC(1+A)V_t \Rightarrow C_{in} = \frac{i_{test}}{s \cdot V_{test}} = C(1+A)$$





$C_{in} \approx -AC$



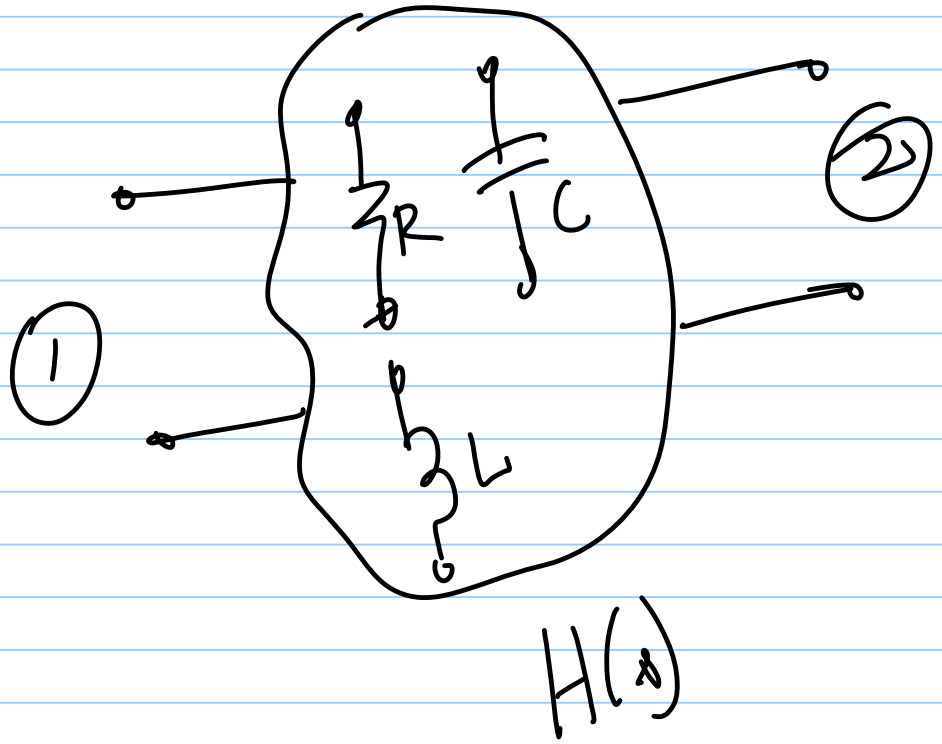
$$A_{o_1} = -G_{m_1}R_{o_1} \qquad A_{o_2} = -G_{m_2}R_{o_2}$$

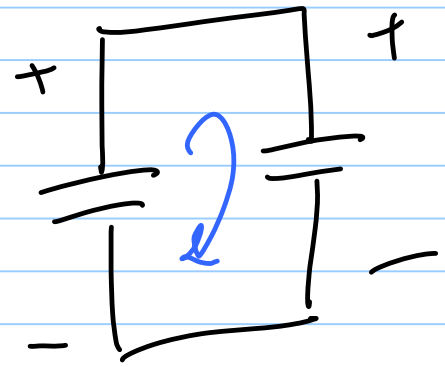
Hw: calculate $\dfrac{V_o(s)}{V_e(s)}$

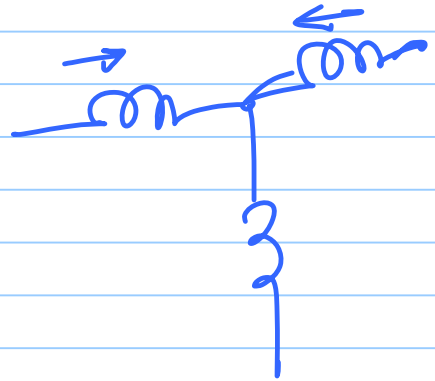
$$C_{eq}@① \simeq C_1 + (1 - A_{o_2})C_c$$

$$C_1 + (1 + G_{m_2}R_{o_2})C_c$$

$$A(s) = V_o(s) / V_e(s) = \frac{N(s)}{D(s)}$$

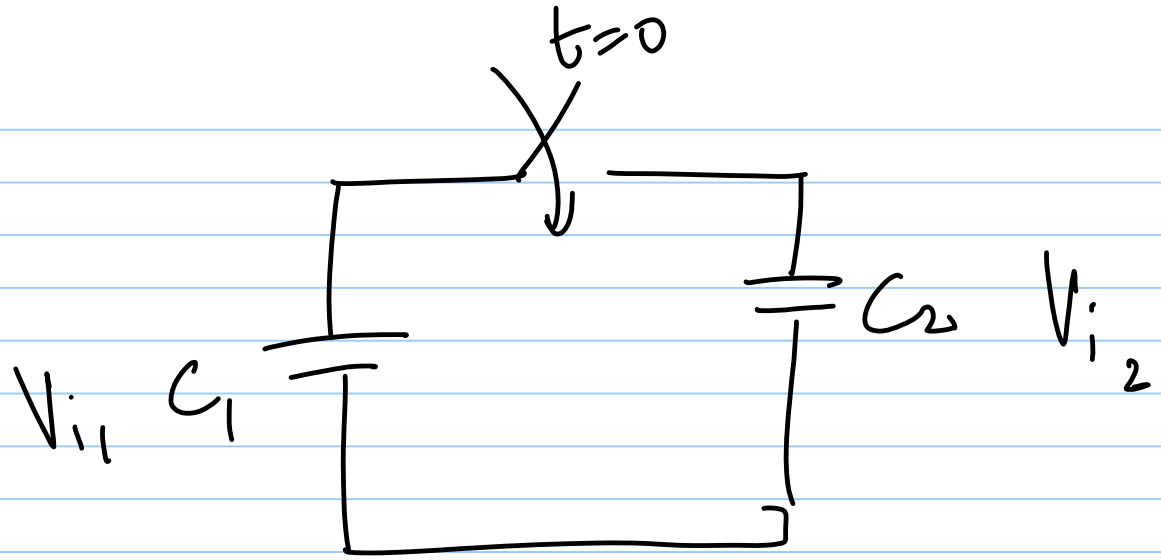






1 C, N R's ⇒ order = 1

2 C, N R's ⇒ order = 2 or 1



$V_{i_1} < V_{i_2}$