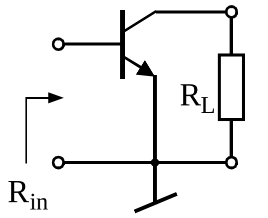
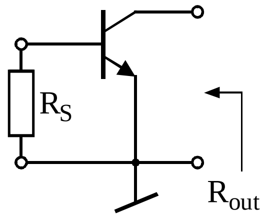
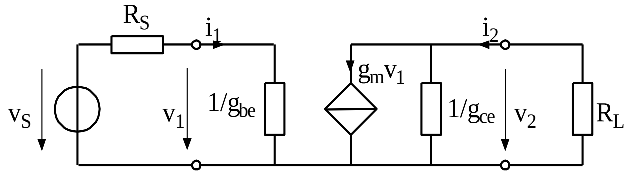
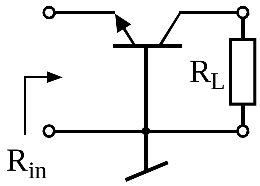
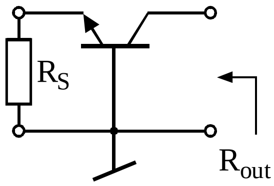
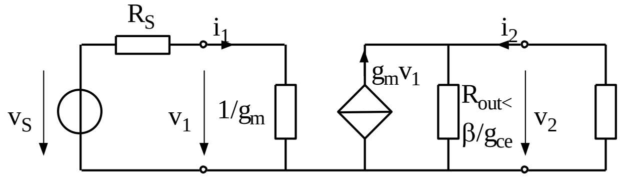
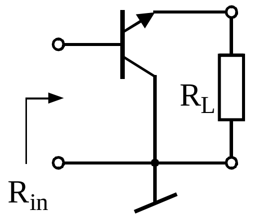
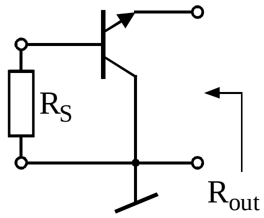
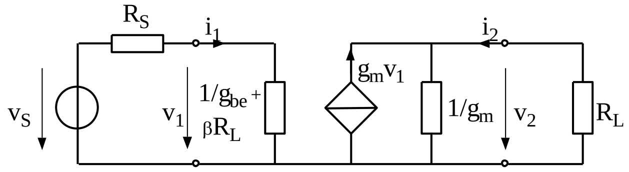
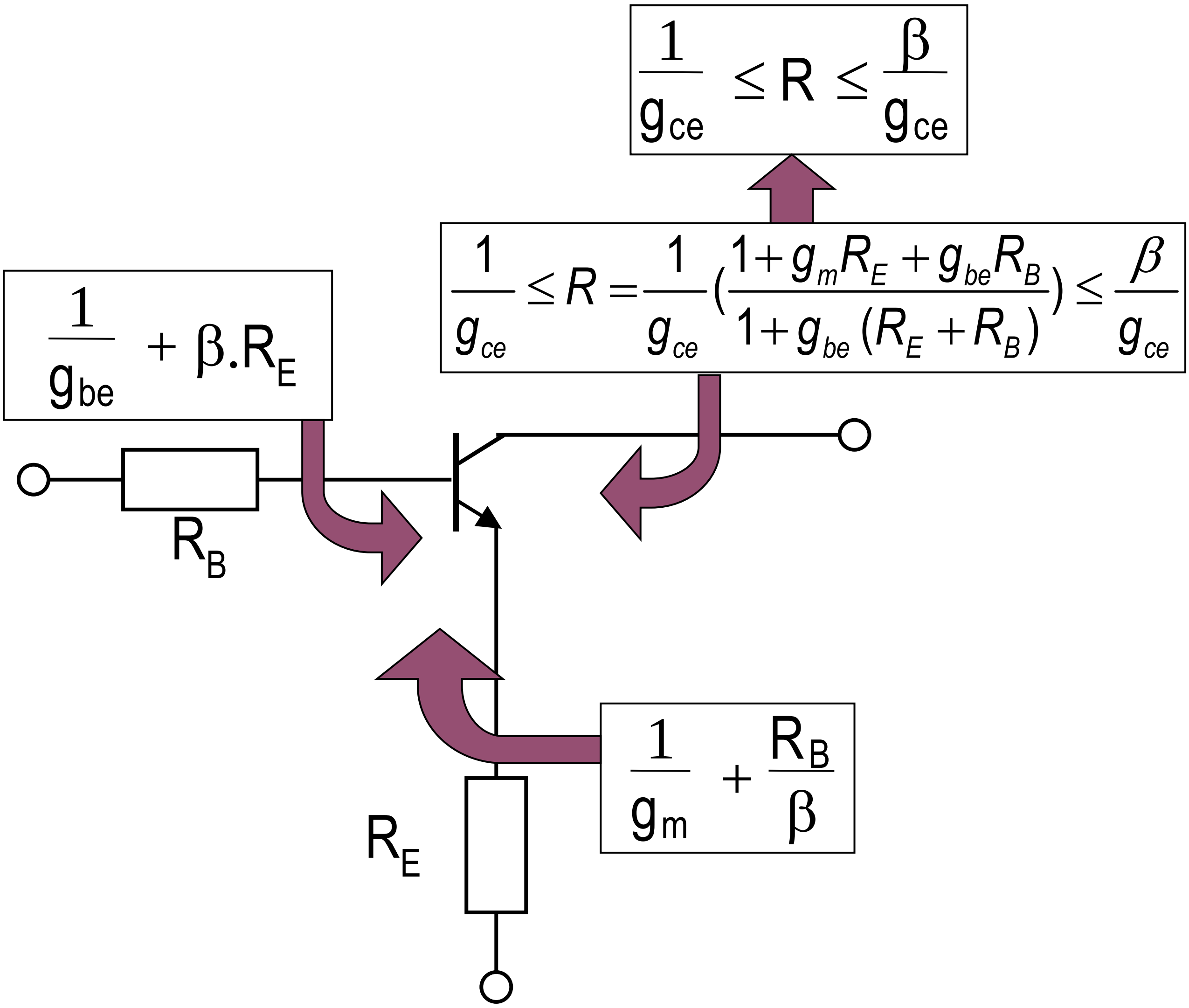
Exemple avec un courant de polarisation de I_{c0}= 1mA, β=100, tension d'Early U_a= 100V

Résistance d'entrée	Résistance de sortie	Gain en tension
EMETTEUR COMMUN (E-C)		
 $R_{in} = \frac{1}{g_{be}} = \frac{\beta.U_T}{I_{c0}}$	 $R_{out} = \frac{1}{g_{ce}} \approx \frac{U_a}{I_{c0}}$	 $A_v = -\frac{g_m R_L}{1+g_{ce}R_L} \approx -g_m R_L$ $A_{v0} = -\frac{g_m}{g_{ce}}$ $(R_L=\infty)$
Moyenne $R_{in} = 2.6\ k\Omega$	Elevée $R_{out} = 100\ k\Omega$	Elevé (negatif)
BASE COMMUNE (B-C)		
 $R_{in} \approx \frac{1}{g_m}(1+ g_{ce}R_L)$ $\approx \frac{1}{g_m}$	 $R_{out} \approx \frac{1}{g_{ce}} \frac{1+g_m R_S}{1+g_{be}R_S}$ $1/g_{ce} < R_{out} < \beta/g_{ce}$	 $A_v = \frac{g_m R_L}{1+g_{ce}R_L} \approx +g_m R_L$ $A_{v0} = \frac{g_m}{g_{ce}}$ $(R_L=\infty)$
Faible $R_{in} = \frac{U_T}{I_{c0}} = 26\ \Omega$	Très élevée $R_{out,max} = \beta/g_{ce} = 10\ M\Omega$	Elevé (positif)
COLLECTEUR COMMUN (C-C)		
 $R_{in} \approx \frac{1}{g_{be}} + \beta R_L$	 $R_{out} \approx \frac{1}{g_m} + \frac{R_S}{\beta}$ $\approx \frac{1}{g_m}$	 $A_v = \frac{g_m R_L}{1+g_m R_L}$ $A_{v0} \approx 1$ $(R_L=\infty)$
Elevée $R_{in} = 2.6\ k\Omega + 100\ R_L$	Faible $R_{out} = \frac{U_T}{I_{c0}} = 26\ \Omega$	Unitaire



$\frac{1}{g_{ce}} \leq R \leq \frac{\beta}{g_{ce}}$
$\frac{1}{g_{ce}} \leq R = \frac{1}{g_{ce}}\left(\frac{1+g_m R_E + g_{be} R_B}{1+g_{be}(R_E+R_B)}\right) \leq \frac{\beta}{g_{ce}}$
$\frac{1}{g_{be}} + \beta.R_E$
R_B
R_E
$\frac{1}{g_m} + \frac{R_B}{\beta}$

Montage Cascode (E-C & B-C)

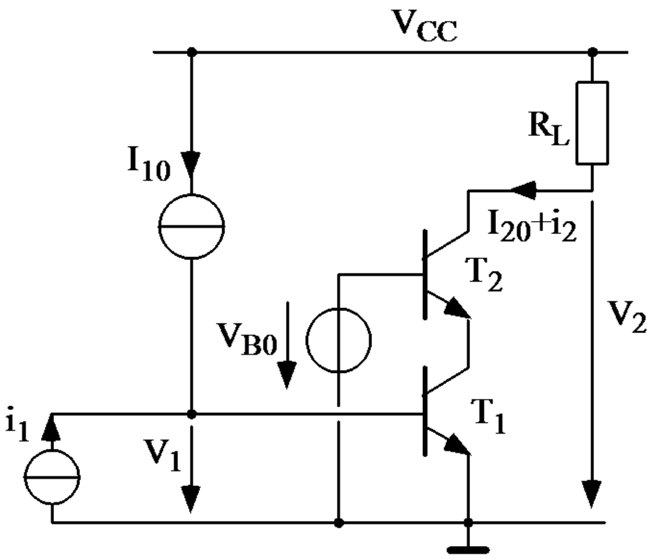
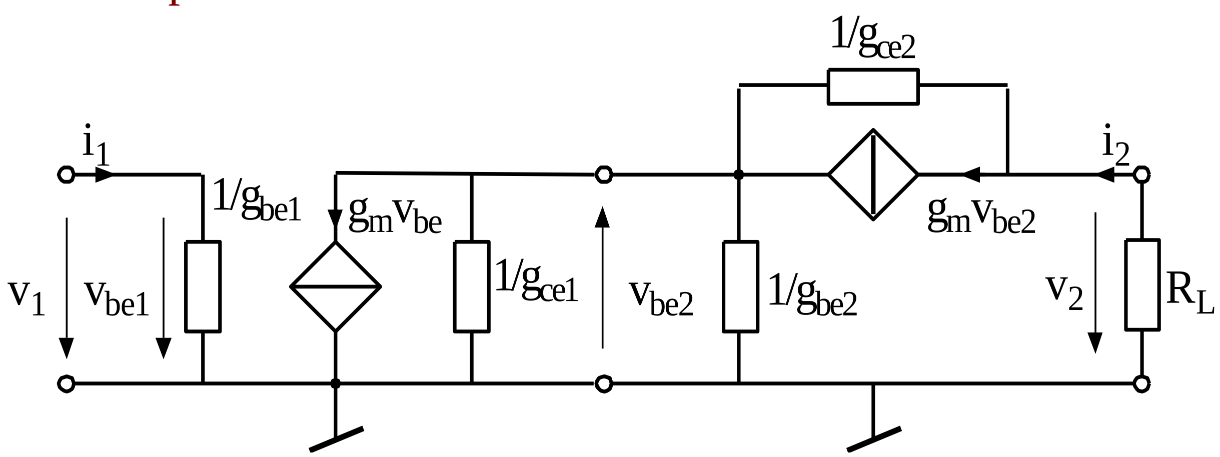
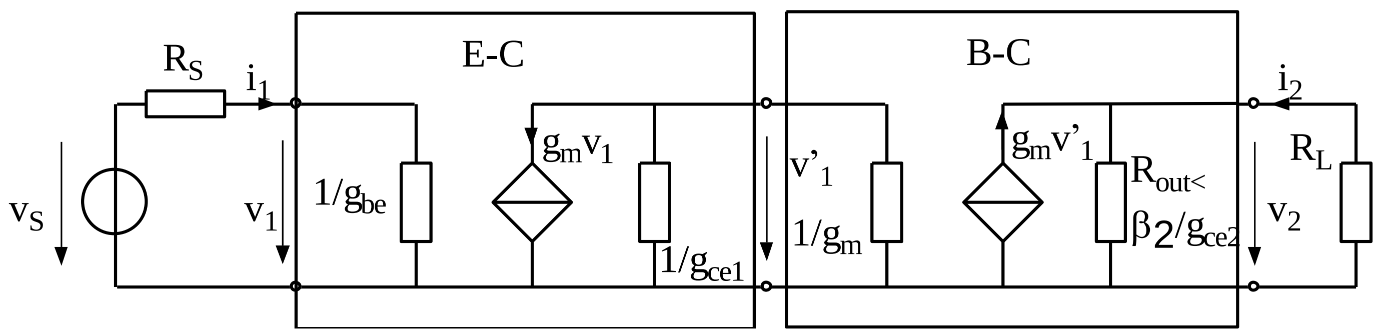


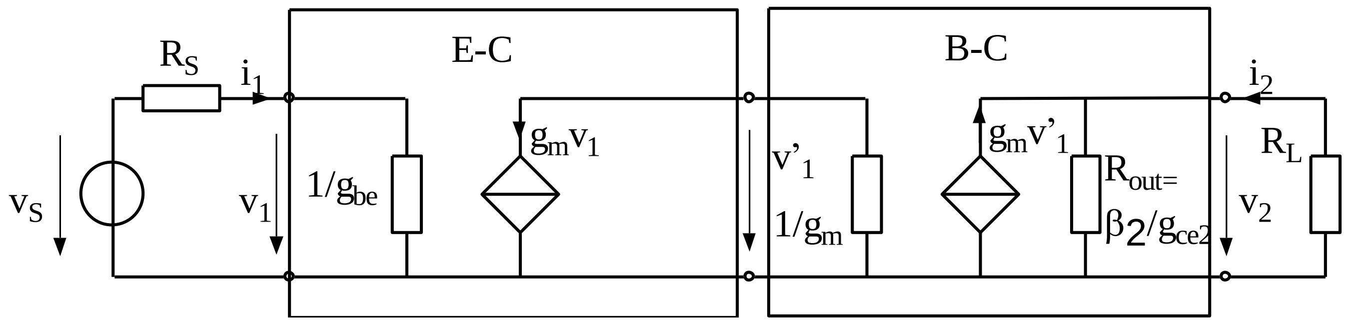
Schéma pour accroissement



Première méthode : simplification et calcule de l'impédance d'entrée, de sortie et du gain par la technique de résolution habituelle.

Deuxième méthode : Utilisation du tableau 13.1 et décomposition du circuit en structure simple (E-C, B-C ou C-C)





$A_{v1}=\dfrac{v'_1}{v_1} = -\dfrac{g_m\, v_1}{g_m\, v_1} = -1$	$A_{v2}=\dfrac{v_2}{v'_1} = g_m \left(\dfrac{\beta_2}{g_{ce2}} // R_L\right)$

$$A_v = A_{v1}.\ A_{v2} = -1.\ g_m\left(\frac{\beta_2}{g_{ce2}} // R_L\right)$$

$$R_{out} = \beta/g_{ce2},\ R_{in} = 1/g_{be1}$$