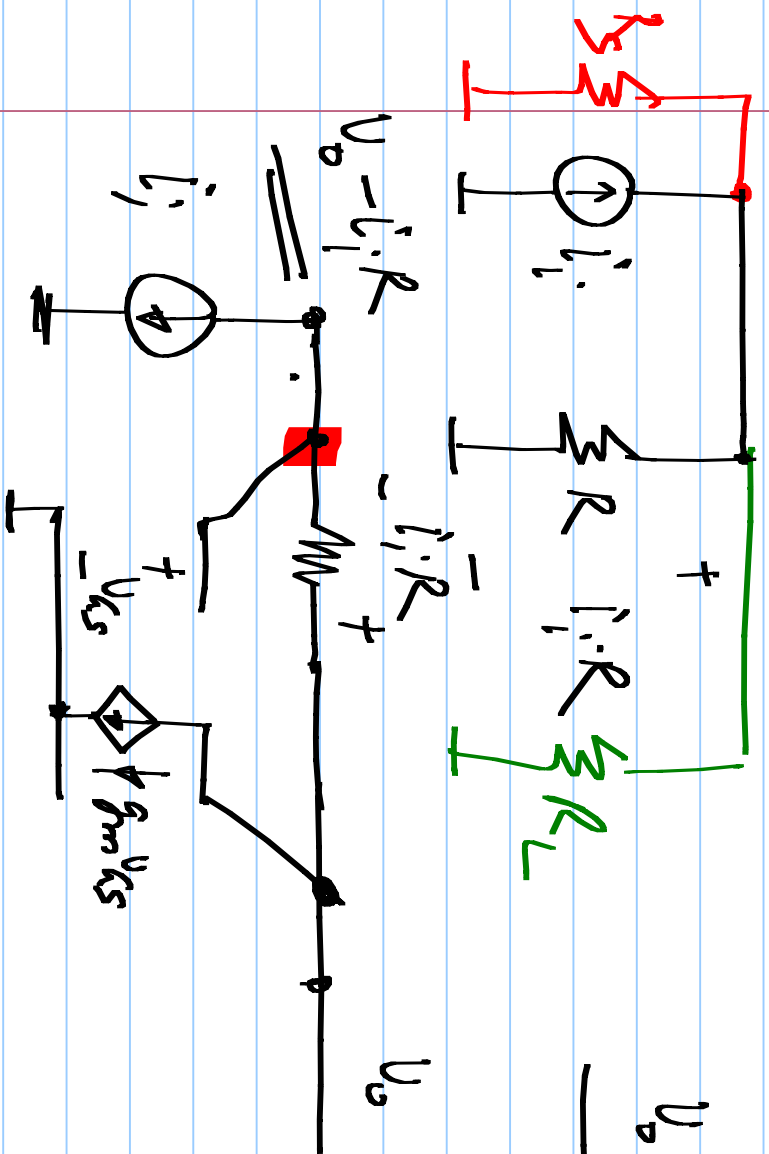


# Lecture 22 Current controlled voltage source



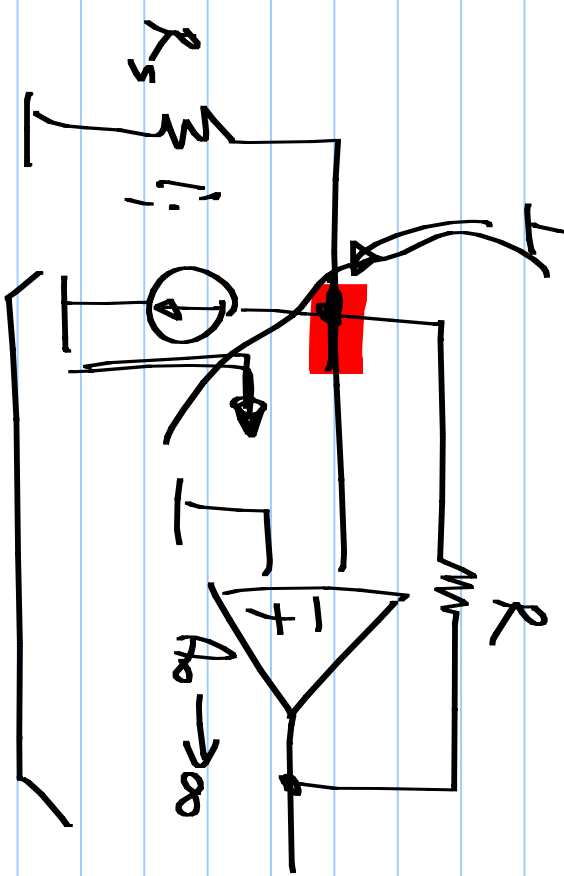
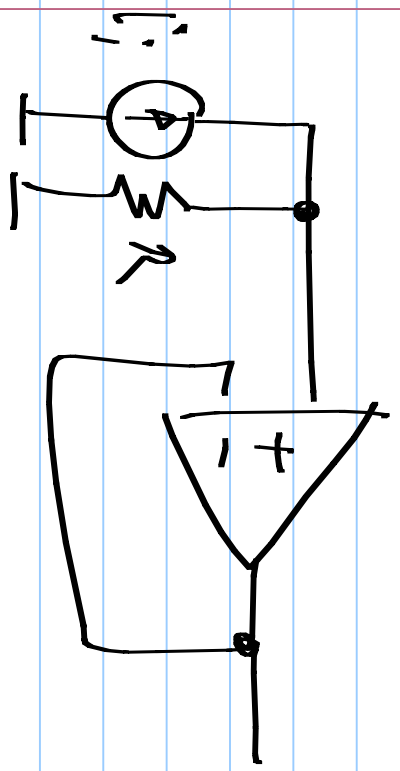
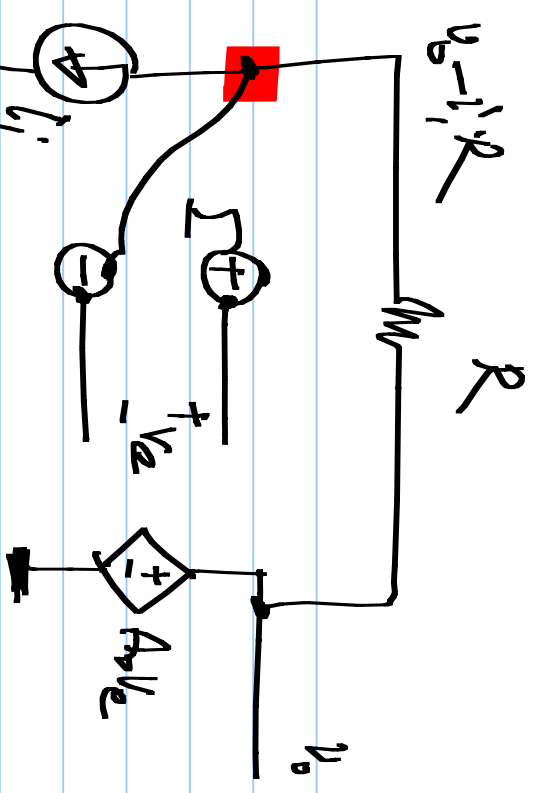
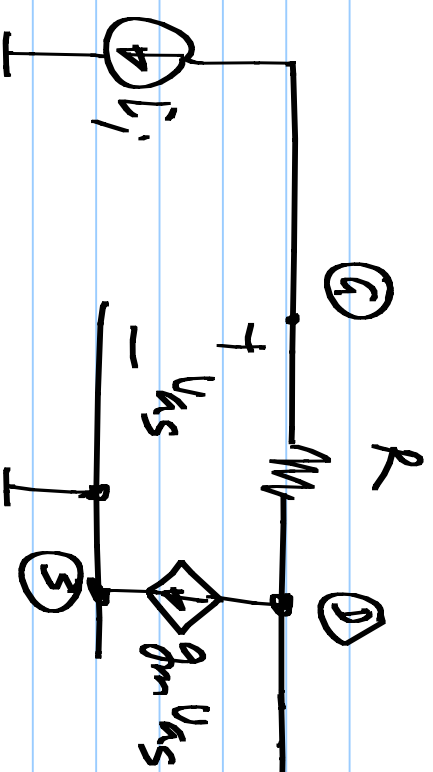
$$v_o = i_i \cdot R$$

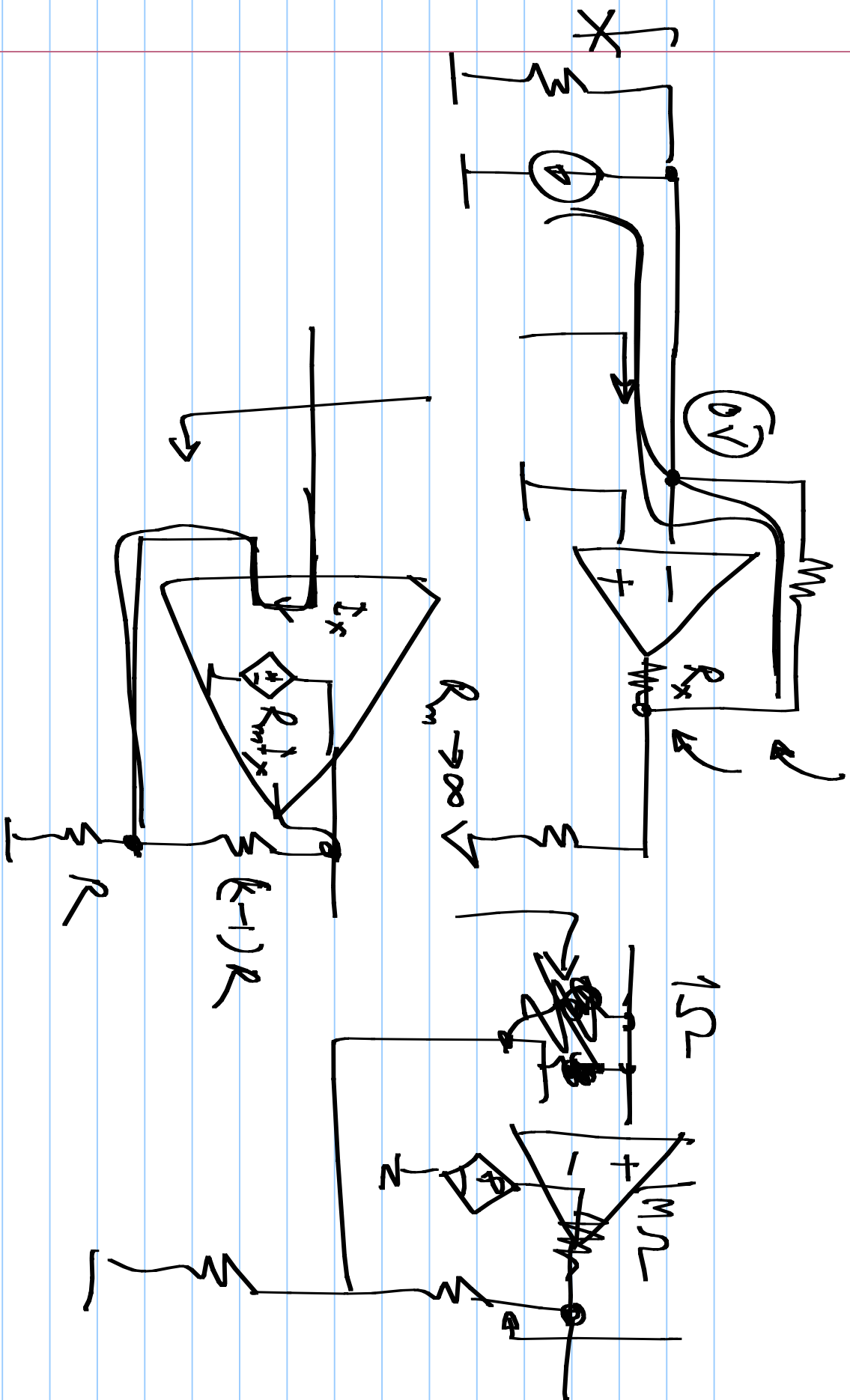
$$v_o - i_i' \cdot R = 0$$

$v_o - i_i' \cdot R < 0$   
 $v_o < i_i' \cdot R$ :  
 push current into the output

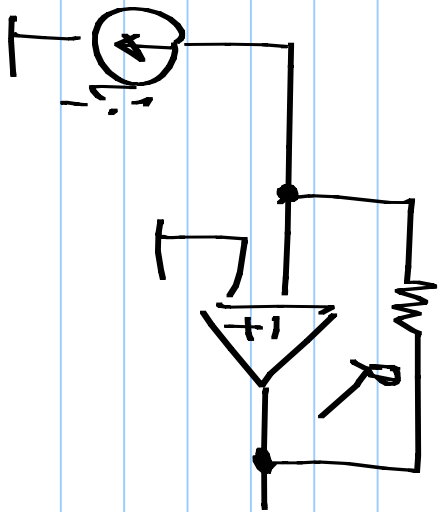
$v_o > i_i' \cdot R$ :  
 pull current from the o/p.

$$v_o - i_i' \cdot R > 0$$

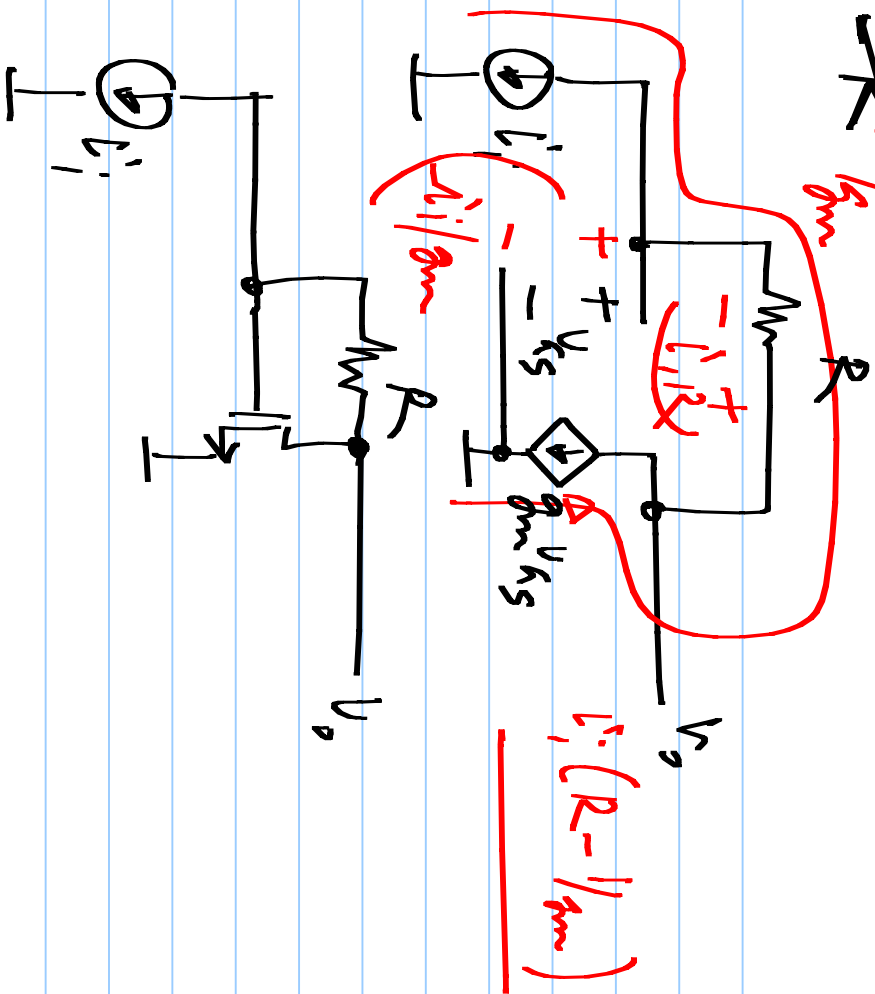


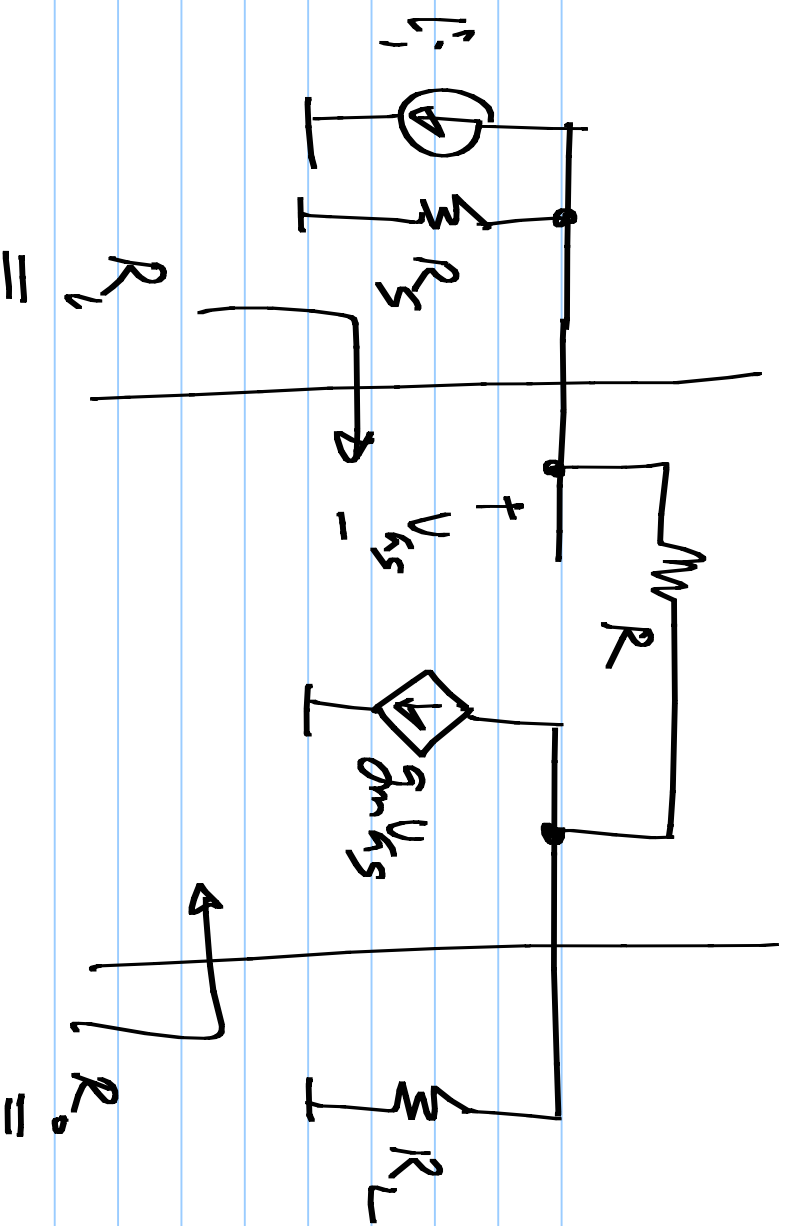


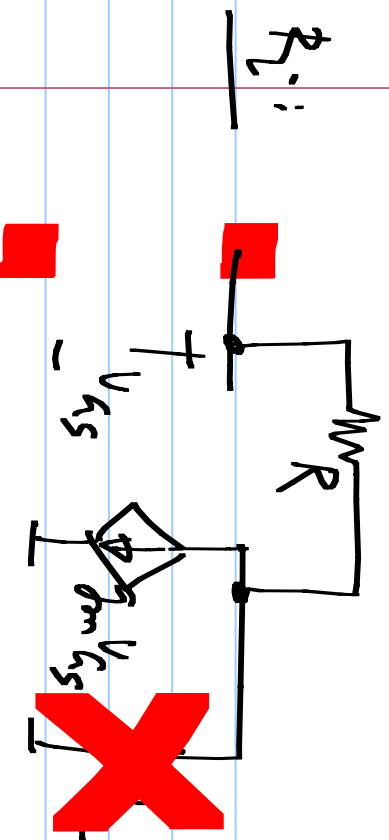
# CCVS



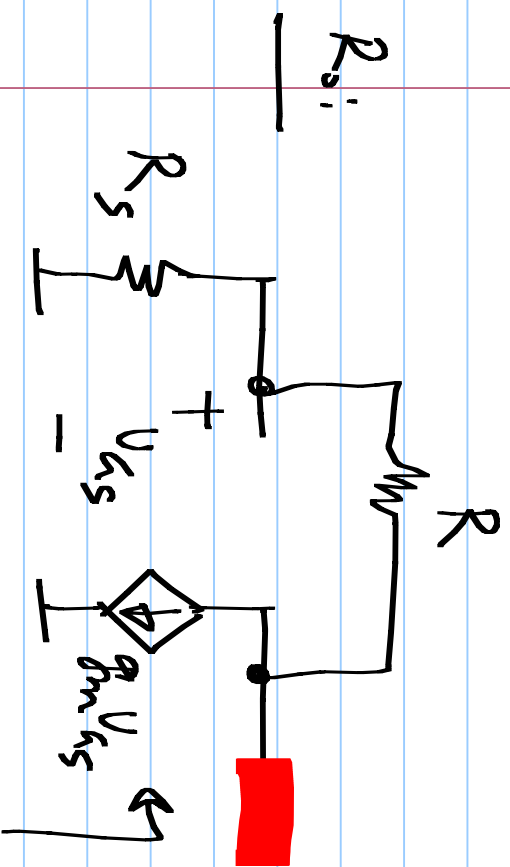
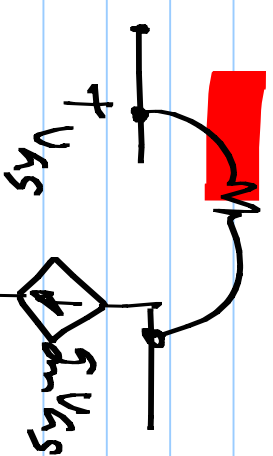
$$V_o = R - \frac{1}{g_m} i_i$$







$$R_i = \frac{R + R_L}{1 + g_m R_L} > \frac{1}{g_m}$$



$$R_o = \frac{R \parallel R_s}{1 + g_m R_s} > \frac{1}{g_m}$$

