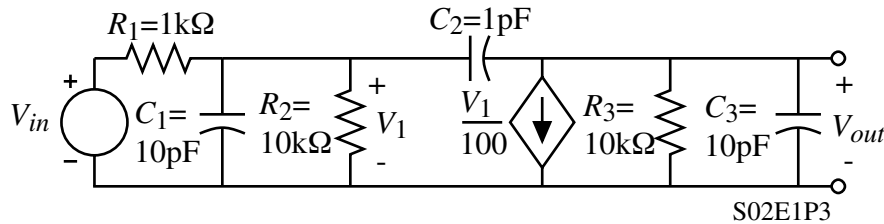


### Homework Assignment No. 4

Due Monday, February 2, 2004 in class

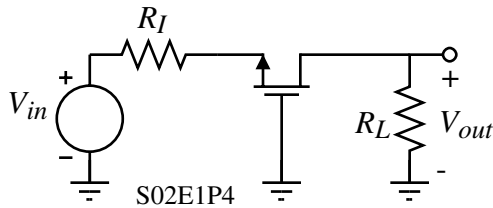
Problem 1 – (10 points)

Find the midband voltage gain and the  $-3\text{dB}$  frequency in Hertz for the circuit shown.



Problem 2 – (10 points)

Find the midband voltage gain and the exact value of the two poles of the voltage transfer function for the circuit shown. Assume that  $R_I = 1\text{k}\Omega$ ,  $R_L = 10\text{K}\Omega$ ,  $g_m = 1\text{mS}$ ,  $C_{gs} = 5\text{pF}$  and  $C_{gd} = 1\text{pF}$ . Ignore  $r_{ds}$ .



Problem 3 - (10 points)

Prob. 7.11 of 3<sup>rd</sup> and 7.21 of 4<sup>th</sup> edition

Problem 4 - (10 points)

Prob. 7.15 of 3<sup>rd</sup> and 7.27 of 4<sup>th</sup> edition

Problem 5 - (10 points)

Prob. 7.21 of 3<sup>rd</sup> and 7.37 of 4<sup>th</sup> edition