## Homework Assignment No. 6

Due on Monday, September 27, 2004

Problems in first edition are indicated in ( ).

1.) An NPN BJT common-emitter inverting amplifier is shown. Assume the parameters of the transistor are $\beta_F = 100$, $V_T = 25\text{mV}$, and $V_A = 100\text{V}$. (a.) If $I_C = 0.5\text{mA}$ and $V_{CE} = 3\text{V}$, find the small signal model parameter values for g_m, r_π, and r_o. (b.) Find the numerical value for the small signal voltage gain, v_{out}/v_{in}, the input resistance, R_{in}, and the output resistance, R_{out}. Assume $r_o = \infty$ in this part of the problem.
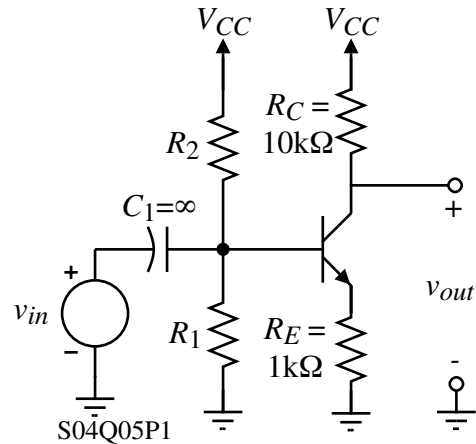
2.) Problem 14.16 (no equivalent problem in first edition of the text).

3.) Problem 14.19 (14.15) of the text.

4.) Problem 14.27 (14.21) of the text.

5.) Problem 14.28 (14.23) of the text