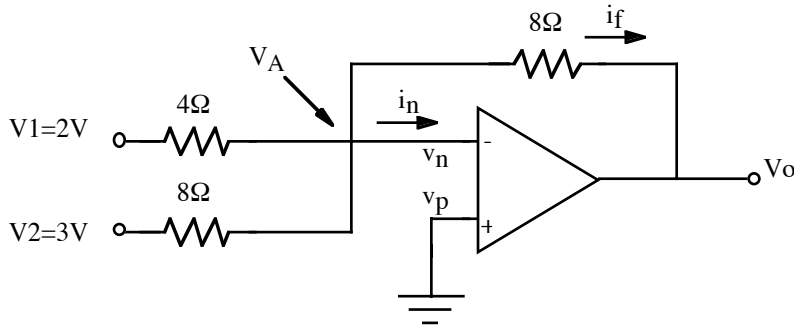**CASE WESTERN RESERVE UNIVERSITY**
Case School of Engineering
Department of Electrical Engineering and Computer Science
**ENGR 210. Introduction to Circuits and Instruments (4)**

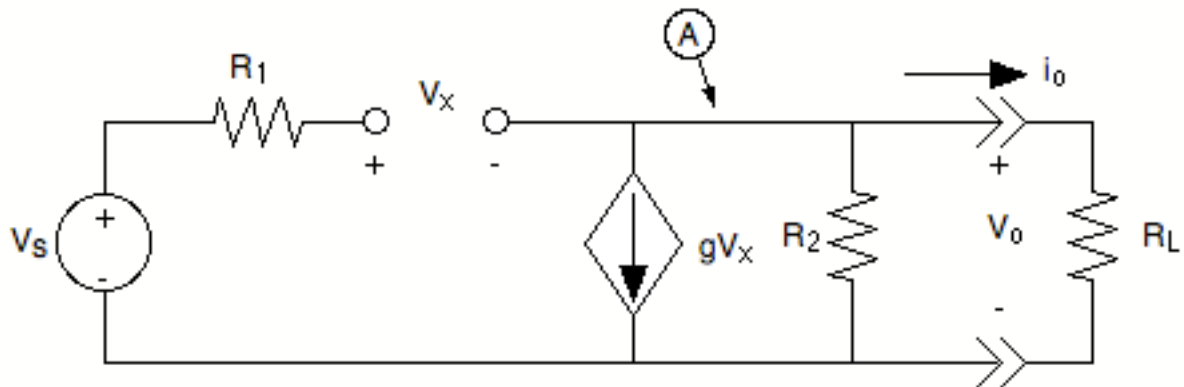**Quiz No. 7**                                                               **3/5/04**

**PUT ANSWERS IN THE SPACE PROVIDED AND, IF APPROPRIATE, SHOW YOUR WORK.  BE SURE TO STATE ANY ASSUMPTIONS**

**Problem 1** (10 points)



(a)  What is $V_A$? _____

(b)  What is $i_n$? _____

(c)  What is $i_f$? _____

(d)  What is $V_o$? _____

**Problem 2** (10 points)

(a) Determine an expression for the voltage $V_x$ in terms of circuit constants (i.e., $V_S$, $R_1$, $g$, $R_L$, and $R_2$).

(b) Determine the open circuit output voltage $V_{oc}$, i.e., $V_o$ for $R_L=\infty$

(c) Determine the short circuit output current $i_{sc}$, i.e., $i_o$ for $R_L=0$

(d) What is the Thevenin output resistance $R_T$ of this circuit?