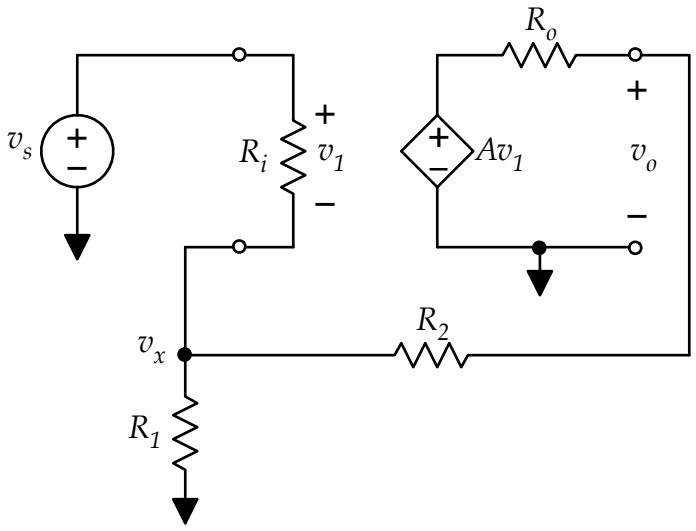
EE 201 — HW 4-1 Name_____

In the amplifier circuit below, the feedback network consists of the two resistors $R_1 = 1$ kΩ, and $R_2 = 10$ kΩ.



a. Start by letting the model be ideal: $R_i \to \infty$, $R_o \to 0$, and $A \to \infty$. Calculate the closed-loop gain in that case.

$G = v_o/v_s =$ _____

b. Then repeat with a model whose parameters are: $R_i = 50$ kΩ, $R_o = 500$ Ω, and $A = 100$. Note: Do not try to analyze this as a feedback problem. Just use circuit analysis to find the closed-loop gain. A couple of node equation might be one way to start. Recall that the notes had similar examples with either $R_i < \infty$, or $R_o > 0$, but not both at the same time.

$G = v_o/v_s =$ _____

Write your answers — and whatever work will fit — on this sheet. Staple any sheets with additional work behind.