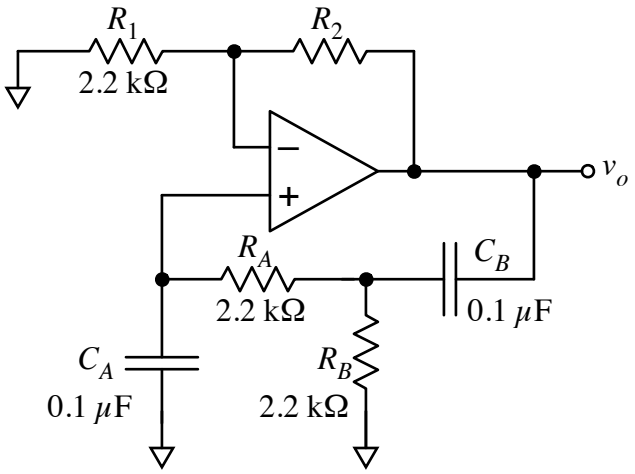
**EE 230 — HW 3.11** Name_____

The oscillator circuit at right is a variation of the Wien-bridge circuit.




Determine the loop gain function for the circuit.

From the loop function, calculate the value for the oscillation frequency. Calculate the minimum of $R_2$ needed to ensure oscillation.

$L(s)$ = _____

$f_o$ = _____; $R_2$ (min) = _____

Use SPICE to simulate the operation of the circuit. Run the simulation twice — once with the gain at the exact minimum needed to start oscillation and then again with the gain 10% higher than the minimum, showing the increase in the amplitude and the resultant clipping that occurs.

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