Problem 1 Identify one operational amplifier that has been published in one of the following in the past 5 years:
   IEEE Journal of Solid State Circuits
   IEEE Trans. On Circuits and Systems (Part 1 or Part 2)
   IEEE International Symposium on Circuits and Systems

Give the circuit schematic and briefly summarize the useful properties that the author claims for this circuit.

Problem 2 Identify one operational amplifier that has been patented in the past 5 years.

Give the circuit schematic and briefly summarize the useful properties that the author claims for this circuit.

Problem 3 Consider the following operational amplifier. The goal is to obtain an expression for the small-signal output voltage in terms of the input variables $V_{IN^+}$ and $V_{IN^-}$.

   a) Write a complete set of small-signal equations that can be solved to obtain $V_{OUT}$. Assume the small-signal parameter $g_o$ is present in all MOS devices.

   b) Solve these equations for $V_{OUT}$ but, if you do not have a solution at the end of $\frac{1}{2}$ hour, stop, and comment on your progress and the amount of effort that you believe would be required to finish the solution.