A PMOS transistor amplifier with two outputs is shown.
Assume the parameters of the transistor are $K_p = 1\text{mA/V}^2$, $V_{TP} = -1\text{V}$, and $\lambda = 0$. (a.)
Find an algebraic expression for the small signal input resistance, $R_{in}$, the output resistances, $R_{out1}$ and $R_{out2}$, the voltage gains, $v_{out1}/v_{in}$, and $v_{out2}/v_{in}$. (c.)
Numerically evaluate the small signal input resistance, $R_{in}$, the output resistances, $R_{out1}$ and $R_{out2}$, the voltage gains, $v_{out1}/v_{in}$, and $v_{out2}/v_{in}$. 

![Circuit Diagram]