PART 3: (FIG. 2)

$I_{REF} = 16\mu A$

$\left(\frac{W}{L}\right)_{M_0} = \left(\frac{W}{L}\right)_{M_1} \Rightarrow \boxed{I_{TAIL} = 16\mu A}$

$(g_m r_o)_{M0} = (g_m r_o)_{M1} = 10 \qquad V_{D_1} = 550mV$

$\Delta V_{OS} = -50mV = g_m r_{o_1} \Delta V_{GS} \Rightarrow \Delta V_{GS} = -0.005V$

$I'_{TAIL} = \frac{\beta}{2}\frac{W}{L}(V_{GS_1} + \Delta V_{GS_1} - V_{th})^2$

$I_{REF} = \frac{\beta}{2}\frac{W}{L}(V_{GS} - V_{th})^2$

$\boxed{I'_{TAIL} = 14.44\mu A}$

$V_{GS_0} = 0.6V = V_{GS_1}$