2.13 $\frac{\Delta R}{R}=k$

(1) $\frac{V_{ref}-V_{11}}{R+\Delta R}=\frac{V_{11}}{R-\Delta R}$ $\therefore V_{11}=\frac{1-k}{2}V_{ref}$

$\frac{V_{ref}-V_{12}}{R-\Delta R}=\frac{V_{12}}{R+\Delta R}$ $\therefore V_{12}=\frac{1+k}{2}V_{ref}$

$\therefore V_{11}-V_{12}=-kV_{ref}$

$\therefore V_{11}-V_{12}=\pm 7.5\times10^{-3}V$

(2) $\frac{V_1-V_{11}}{R_2'}=\frac{V_{11}-V_{12}}{R_1'}=\frac{V_{12}-V_2}{R_2'}$

$\therefore V_1-V_2=(1+\frac{2R_2'}{R_1'})(V_{11}-V_{12})$

$\frac{V_1-V_n}{R_3'}=\frac{V_n-V_o}{R_4'}$ $V_n=V_p$

$\frac{V_2-V_p}{R_3'}=\frac{V_p}{R_4'}$

$\therefore V_o=-\frac{R_4'}{R_3'}(V_1-V_2)$

$\therefore V_o=-\frac{R_4'}{R_3'}(1+\frac{2R_2'}{R_1'})(V_{11}-V_{12})$

$\therefore V_o=\bullet\frac{R_4'}{R_3'}(1+\frac{2R_2'}{R_1'})kV_{ref}\approx 1.20V$

(3)

应增大R_3'和R_1'，减小R_4'和R_2'

2.14

当 $\frac{\Delta R}{R}=0.005$ 时，$V_O=5V$

∴ $\frac{R_4'}{R_3'}\left(1+\frac{2R_2'}{R_1'}\right)=200$

∴ 可以令 $R_3'=10\Omega$，$R_4'=200$，$R_1'=20\Omega$，$R_2'=90\Omega$.