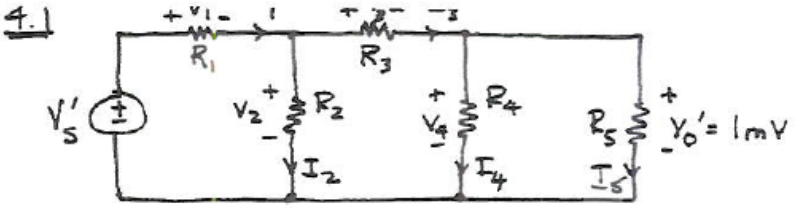
4.1



All $R = 2\,k\Omega$

$V_s = 6V$

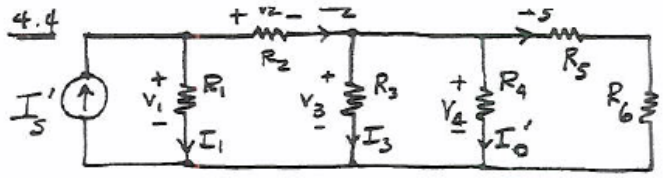
$I_5 = V_o'/R_5 = 1/2\ \mu A$ $\quad I_4 = V_o'/R_4 = 1/2\ \mu A$ $\quad I_3 = I_4 + I_5 = 1\ \mu A$

$V_3 = I_3 R_3 = 2mV$ $\quad V_2 = V_3 + V_o' = 3mV$ $\quad I_2 = V_2/R_2 = 1.5\ \mu A$

$I_1 = I_2 + I_3 = 2.5\ \mu A$ $\quad V_1 = I_1 R_1 = 5mV$ $\quad V_s' = V_1 + V_2 = 8mV$

$\frac{V_o}{V_o'} = \frac{V_s}{V_s'} \Rightarrow \quad V_o = \left(\frac{6}{8m}\right)(1m) = 0.75\ V$ $\quad \boxed{V_o = 0.75V}$

4.4



$R_4 = 4k\Omega$

All other $R = 2k\Omega$

$I_s = 12mA$ $\quad I_o' = 1mA$

$V_4 = I_o' R_4 = 4V$ $\quad I_5 = V_4/(R_5 + R_6) = 1mA$ $\quad V_3 = V_4 = 4V$

$I_3 = V_3/R_3 = 2mA$ $\quad I_2 = I_3 + I_5 + I_o' = 4mA$ $\quad V_2 = I_2 R_2 = 8V$

$V_1 = V_2 + V_3 = 12V$ $\quad I_1 = V_1/R_1 = 6mA$ $\quad I_s' = I_1 + I_2 = 10mA$

$\frac{I_o}{I_o'} = \frac{I_s}{I_s'} \Rightarrow \quad I_o = \left(\frac{12m}{10m}\right)(1m) = 1.2mA$ $\quad \boxed{I_o = 1.2mA}$