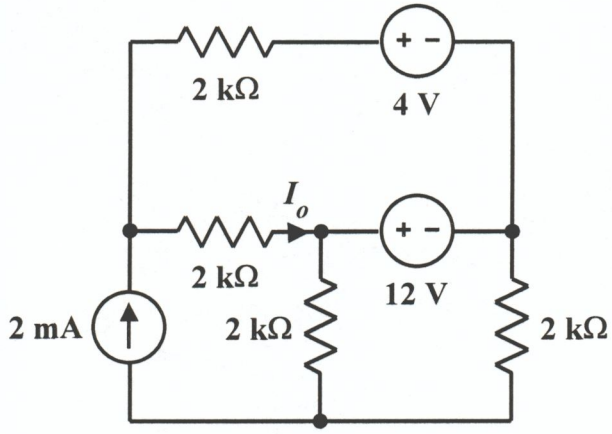
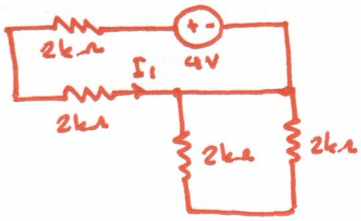
EE 2240

Problem #02

Use superposition to find I_o. Show the details of your work.

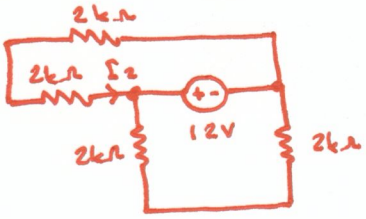


For the 4V source:



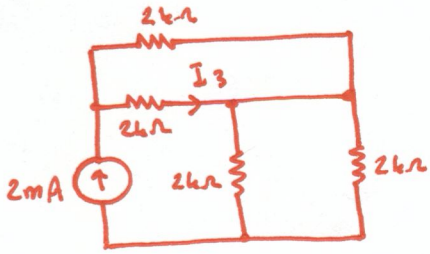
$$I_1 = \frac{4V}{2k\Omega + 2k\Omega} = 1\,mA$$

For the 12V source:



$$I_2 = -\frac{12V}{2k\Omega + 2k\Omega} = -3\,mA$$

For the 2mA source:



$$I_3 = \frac{2k\Omega}{2k\Omega + 2k\Omega}(2\,mA) = 1\,mA$$

$$I_o = I_1 + I_2 + I_3 = 1 - 3 + 1 = -1\,mA$$