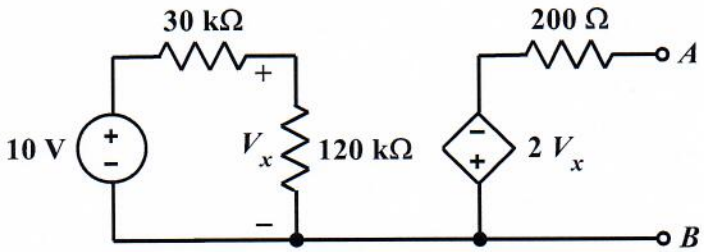
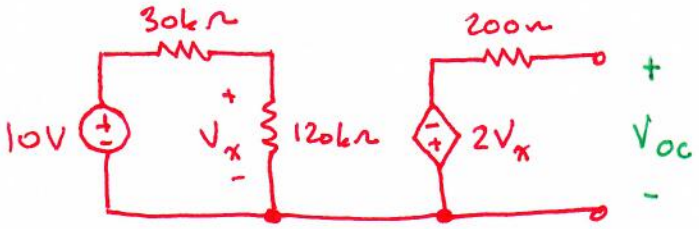
EE/EET 2240

Homework Problem 030

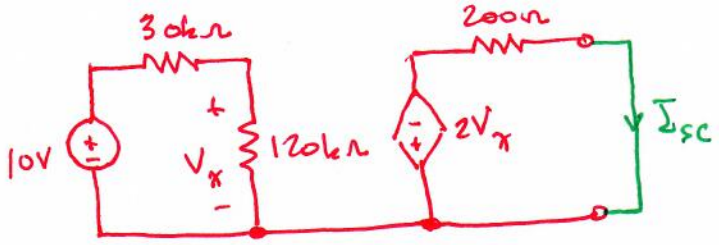


Determine and sketch the Norton equivalent circuit with respect to terminals A and B.



$$V_x = \frac{120k\Omega}{30k\Omega + 120k\Omega} \cdot 10V = 8V$$

$$V_{oc} = -2V_x = -16V$$

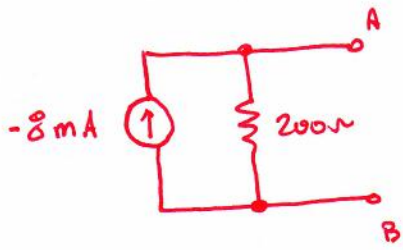


$$V_x = \frac{120k\Omega}{30k\Omega + 120k\Omega} \cdot 10V = 8V$$

$$I_{sc} = -\frac{2V_x}{200\Omega} = -80mA$$

$$I_N = I_{sc} = -8mA$$

$$R_N = \frac{V_{oc}}{I_{sc}} = \frac{-16V}{-80mA} = 200\Omega$$



or