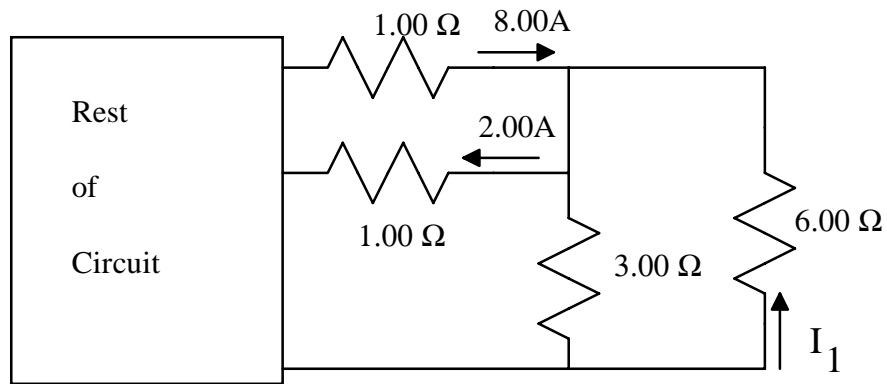


**PHY 3270**  
**EXAM #1**

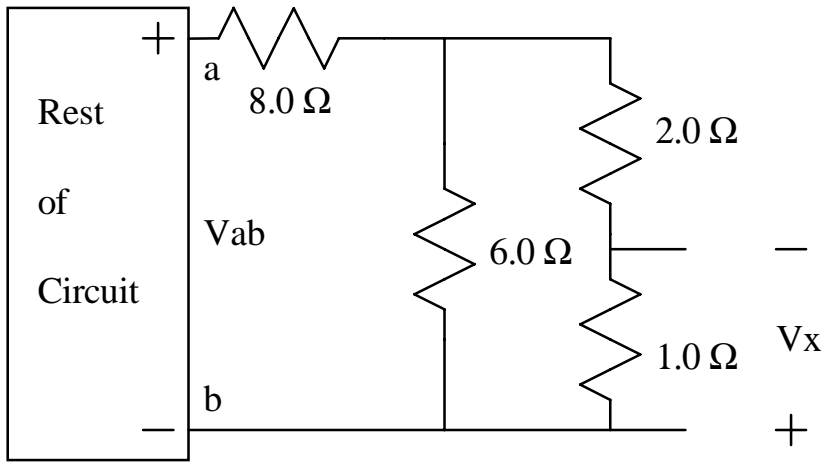
1.



(a.) Determine the value of  $I_1$  .

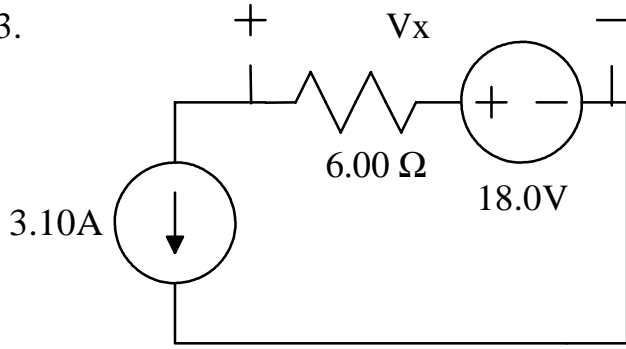
(b.) Determine the power absorbed by 'Rest of Circuit'.

2.



Find  $V_x$  if  $V_{ab} = 30.0\text{V}$ .

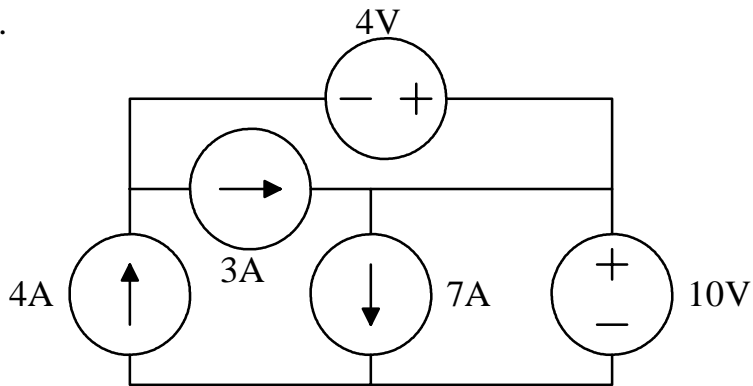
3.



(a.) Find  $V_x$ .

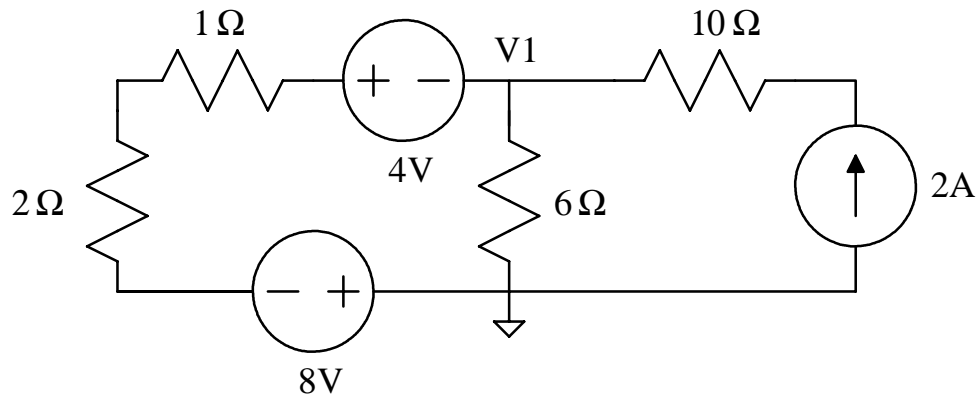
(b.) Determine the power absorbed by the current source.

4.



Determine the power absorbed by the 4A current source.

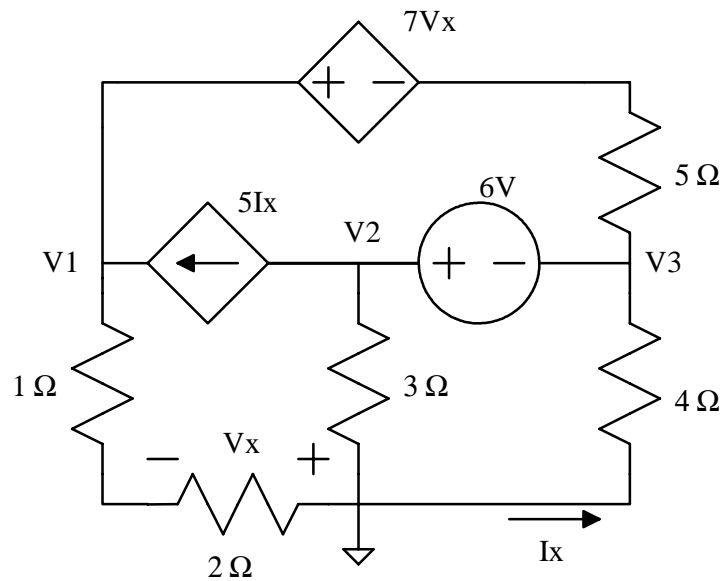
5.



(a.) Write down the appropriate Node voltage equation that would be required to solve for  $V_1$ . Do not solve it.

(b.) Write down the appropriate set of Mesh equations that would be required to solve for mesh currents in the circuit above. Again, do not solve.

6.



(a.) Write down the appropriate set of Node voltage equations that would be needed to solve for the node voltages in the circuit above. Do not solve.

(b.) Write down the appropriate set of Mesh equations that would be needed to solve for the unknown mesh currents in the circuit above. Do not solve.