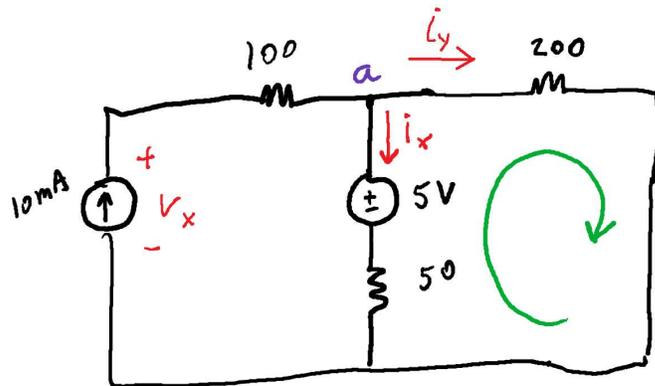


(a) Write KCL equation of the node a starting from the leftmost branch and progress in order. Use a convention that a current entering a node is positive. Also, use the variables defined in the figure (e.g.,  $i_x$ ).

(b) Write KVL equation for loop marked in the picture. Start from a voltage source and progress along the direction guided by the arrow.

(c) Find  $i_x$ .

(d) Find  $v_x$ .



Write your answers in the following format:

Qa:  $10 + 10 i_1 - 10 + 0.1 v_1 + 40 = 0$

Qb:  $10 + 10 i_1 - 10 + 0.1 v_1 + 40 = 0$

Qc:  $i_x = 10A$

Qd:  $v_x = 0V$