

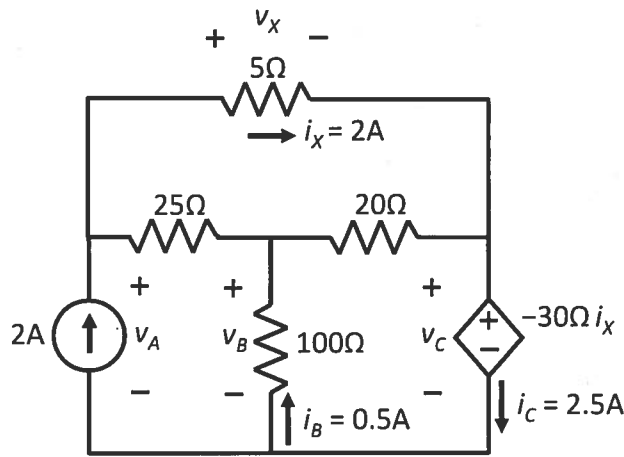
NAME _____ McGill ID# _____

READ each question carefully. Do your work independently. SHOW ALL YOUR WORK. Give units on your answers (where appropriate).

Consider the circuit diagram below. Answer the questions.

a) KVL is satisfied for every loop in a circuit. TRUE / FALSE [1pt]

b) KCL is satisfied for every node in a circuit. TRUE / FALSE [1pt]



c) Do the variables v_x and i_x satisfy passive sign convention? [1pt]

d) What is the value of v_x ? [2pts]

e) The independent source is absorbing 100W from the circuit. What is the value of v_A ? [2pts]

f) What is the value of v_C ? [2pts]

g) Do the variables v_C and i_C satisfy passive sign convention? [1pt]

h) How much power is the dependent voltage source delivering or absorbing? [2pts]

c) yes [+1]

f) $v_C = -30\Omega \cdot i_x$ [+1]

d) $v_x = 5\Omega \cdot i_x$ [+1]

$= -60V$ [+1]

$= 10V$ [+1]

g) yes [+1]

e) $-100W = 2A \cdot v_A$ [+1]

h) $P_{abs} = v_C \cdot i_C$ [+1]

$v_A = -50V$ [+1]

$= -150W$ absorbed by source

or
+150W delivered by source

