

Name: _____ (please print)

Signature: _____

ECE 2201 – Quiz #2
September 27, 2021

- This quiz is closed book, closed notes. You may not work with another person or try to obtain the answer to the quiz online.
- Show all work on these pages. Show all work necessary to complete the problem. A solution without the appropriate work shown will receive no credit. A solution which is not given in a reasonable order will lose credit.
- Show all units in solutions, intermediate results, and figures. Units in the quiz will be included between square brackets.
- If the grader has difficulty following your work because it is messy or disorganized, you will lose credit.
- Do not use red ink. Do not use red pencil.
- You will have 30 minutes to work on this quiz.

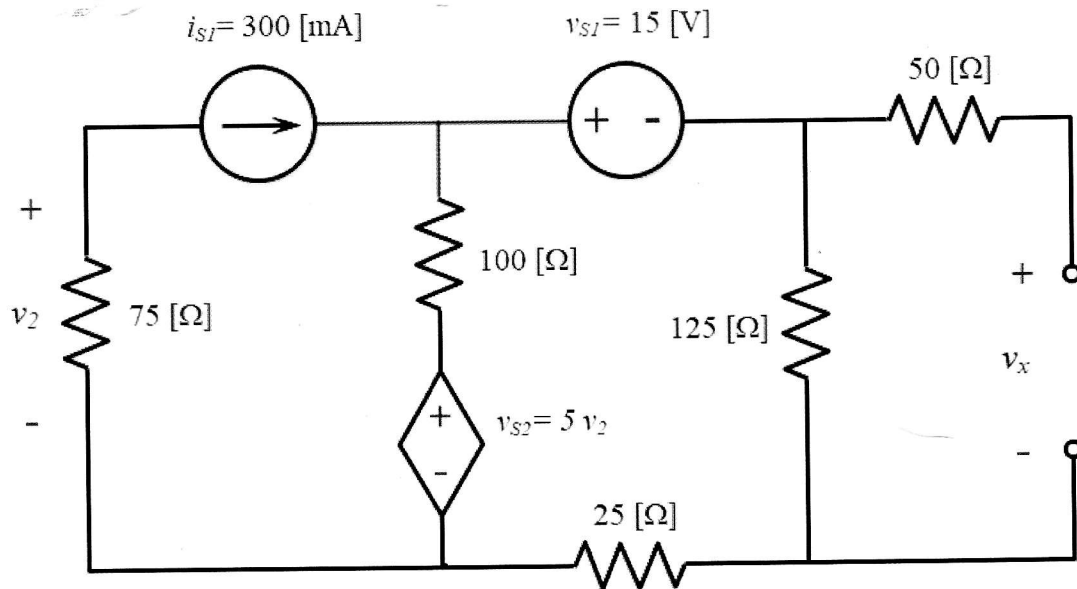
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Room for extra work

For the circuit below, do the following.

a) Find the power delivered by i_{SI} .

b) Find v_x .

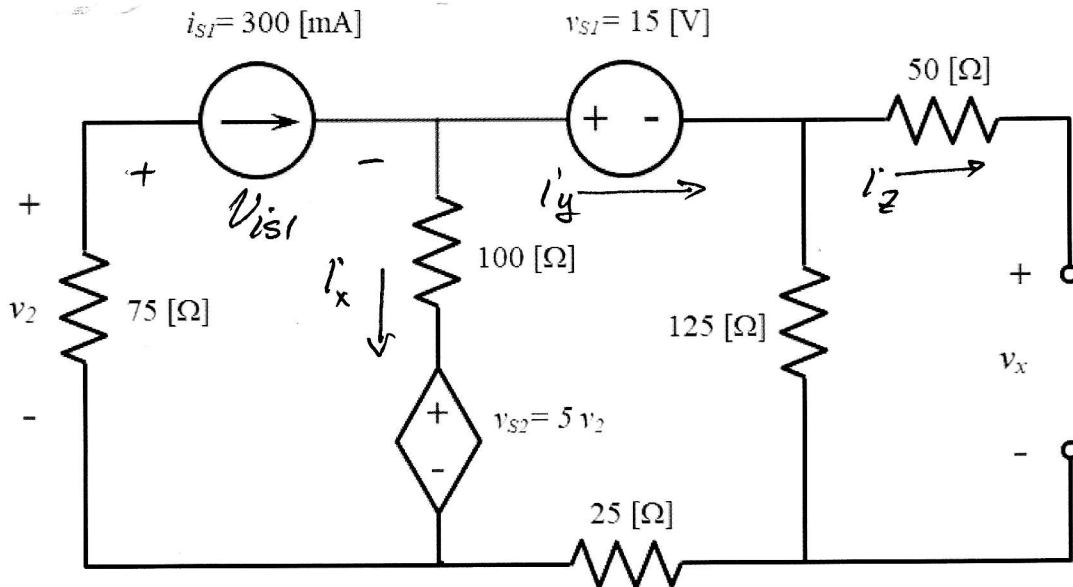


Room for extra work

For the circuit below, do the following.

a) Find the power delivered by i_{s1} .

b) Find v_x .



Note that $i'_2 = 0$. Then we can solve for i'_x and i'_y with two equations, plus an equation for v_2 .

$$\text{KCL: } 0.3 = i'_x + i'_y \quad + 3$$

$$\text{KVL: } 100i'_x + 5v_2 - 25i'_y - 125i'_y - 15 = 0 \quad + 4$$

$$\text{Ohm: } v_2 = -0.3(75) = -22.5 \text{ [V]} \quad +2 \text{ sign} \quad + 1$$

$$i'_x = 690 \text{ [mA]} \quad i'_y = -390 \text{ [mA]} \quad + 1$$

$$\text{a) } P_{\text{del by } i_{s1}} = -v_{s1} i'_{s1} \quad +2 \text{ sign} \quad + 1$$

$$\text{KVL: } v_{s1} + 15 + 125i'_y + 25i'_y + 0.3(75) = 0 \quad + 4$$

$$v_{s1} = 21.0 \text{ [V]} \quad + 1$$

Room for extra work

$$\therefore P_{del by is_1} = -(21)(0.3) = -6.3 \text{ [W]}$$

+ 1

b) KVL: $V_x - 125 i_y = 0$

+ 4

$$V_x = 125 i_y = -48.75 \text{ [V]}$$

+ 1

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