

Name: _____ (please print)

Signature: _____

ECE 2201 – Quiz #3
October 1, 2019

**Keep this quiz closed and face up
until you are told to begin.**

1. This quiz is closed book, closed notes. You may use one 8.5" x 11" crib sheet, or its equivalent.
2. 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.
3. Show all units in solutions, intermediate results, and figures. Units in the quiz will be included between square brackets.
4. If the grader has difficulty following your work because it is messy or disorganized, you will lose credit.
5. Do not use red ink. Do not use red pencil.
6. You will have 30 minutes to work on this quiz.

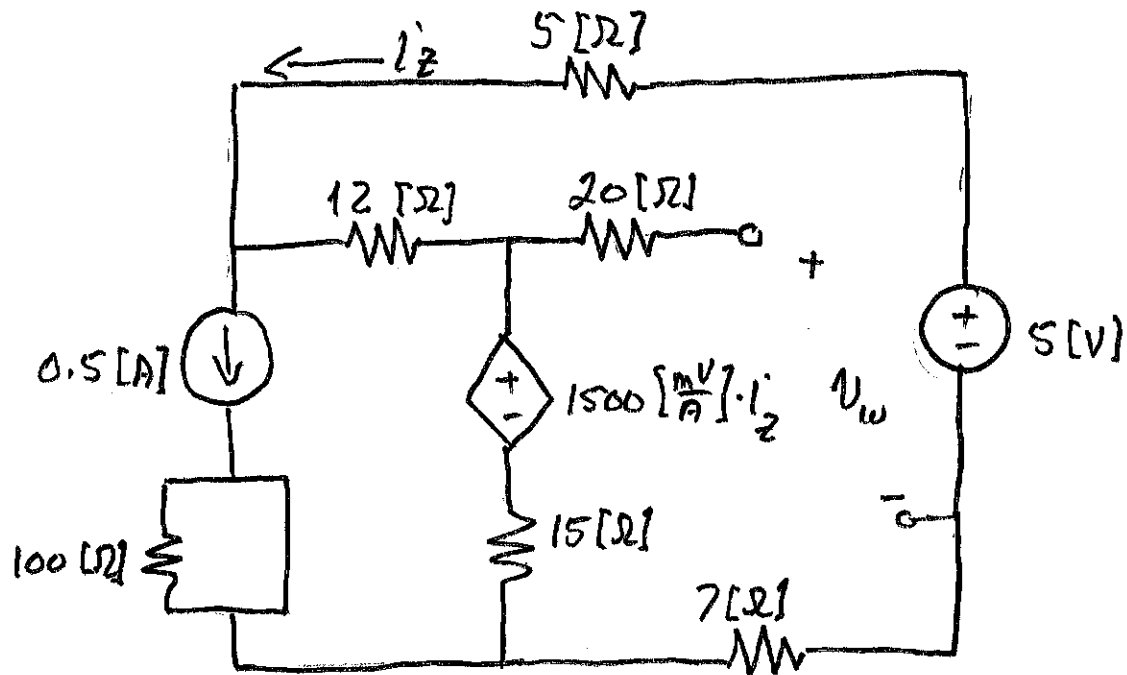
_____ /25

Room for extra work

For the circuit below, do the following:

a) Find the power delivered by the dependent voltage source.

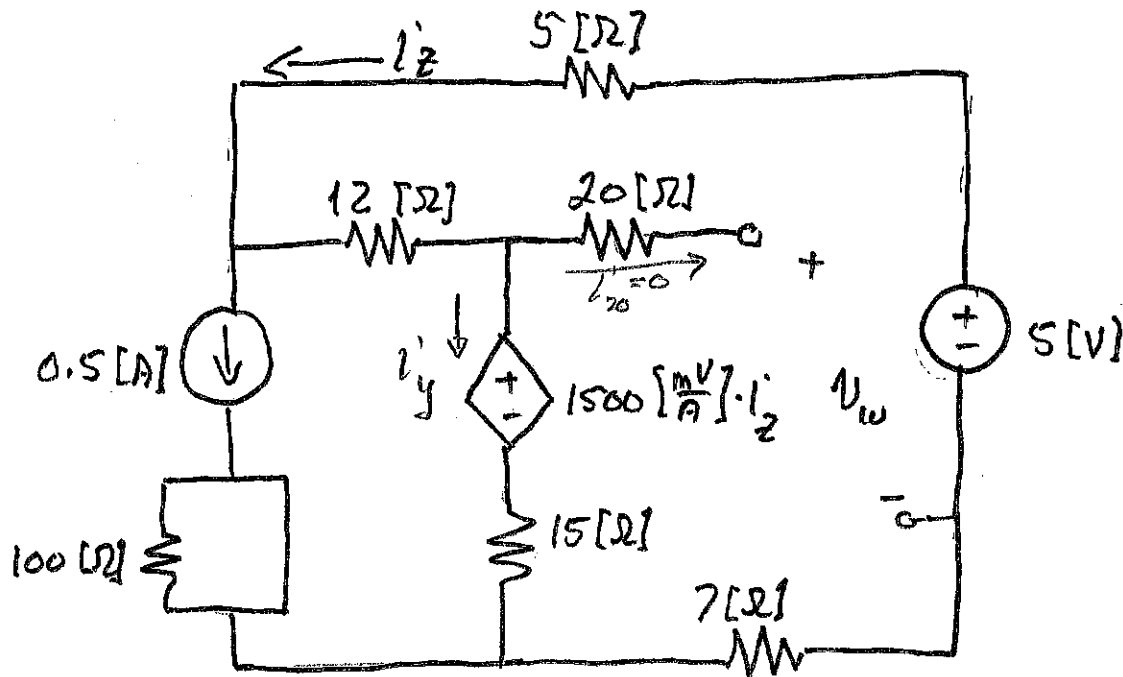
b) Find v_w .



Room for extra work

For the circuit below, do the following:

- Find the power delivered by the dependent voltage source.
- Find v_w .



We need i_y :

$$\text{KCL: } -i_2 + i_y + 0.5 = 0 \quad (1)$$

$$\text{KVL: } 5i_2 + (12 + 15)i_y + 1.5 \left[\frac{\text{V}}{\text{A}} \right] i_2 + 7i_2 - 5 = 0$$

$$\Rightarrow 13.5i_2 + 27i_y = 5 \quad (2)$$

Solving (1) and (2) gives

$$i_2 = 0.4568 \text{ [A]} \quad i_y = -0.0432 \text{ [A]}$$

$$a) \quad P_{\text{del by } 1.5 \text{ V/A}} = -i_y \cdot (1.5 \left[\frac{\text{V}}{\text{A}} \right]) i_2 = -(-0.0432)(1.5)(0.4568)$$

$$\boxed{P_{\text{del by } 1.5 \text{ V/A}} = 29.61 \text{ [mW]}}$$

Room for extra work

$$V_w: \quad V_w - 5 + 5i_z + 12i_y = 0$$

$$\boxed{V_w = 3.234 \text{ [V]}}$$