Name: _____ (please print)

Signature: _____

# ECE 2201 – Quiz #5
## June 30, 2021
## Online

1. This quiz is open book, open notes. You may not work with another person or try to obtain the answer to the quiz online.
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, write a complete set of mesh current equations that could be used to solve the circuit. Do not simplify the circuit in any way. Do not attempt to solve the equations. Label your mesh currents clearly.
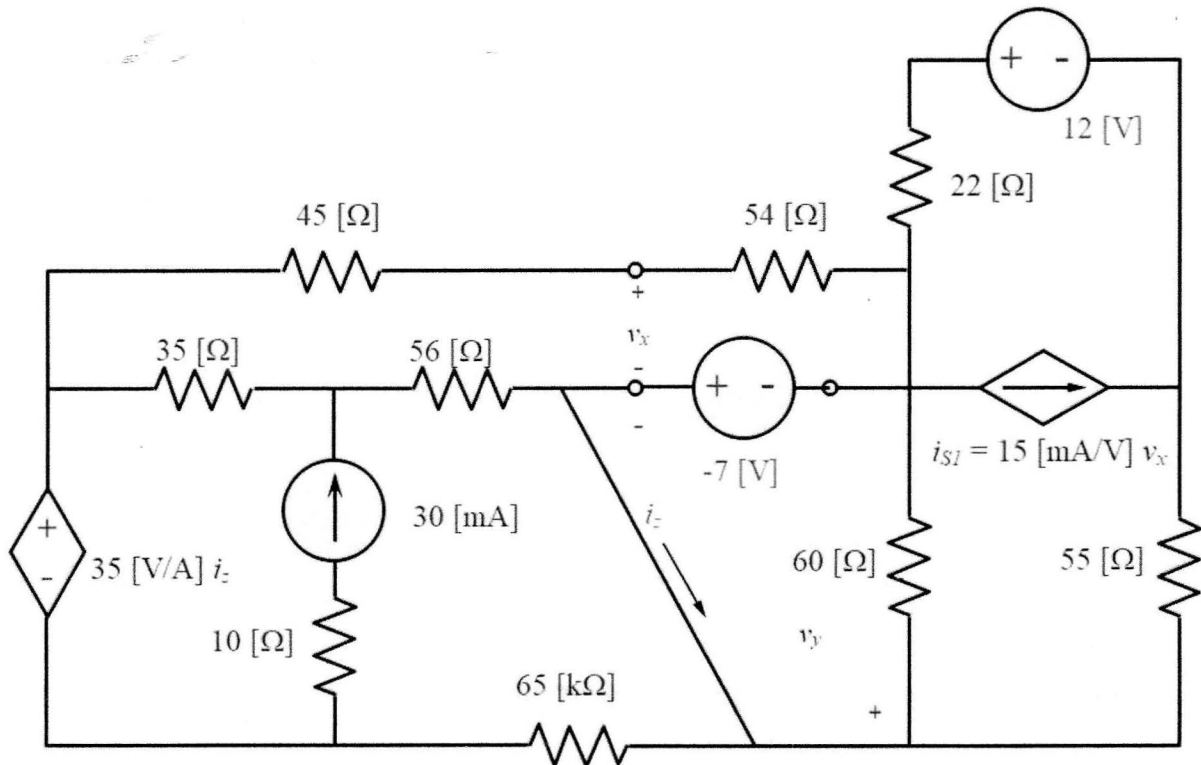
Room for extra work

For the circuit below, write a complete set of mesh current equations that could be used to solve the circuit. Do not simplify the circuit in any way. Do not attempt to solve the equations. Label your mesh currents clearly.
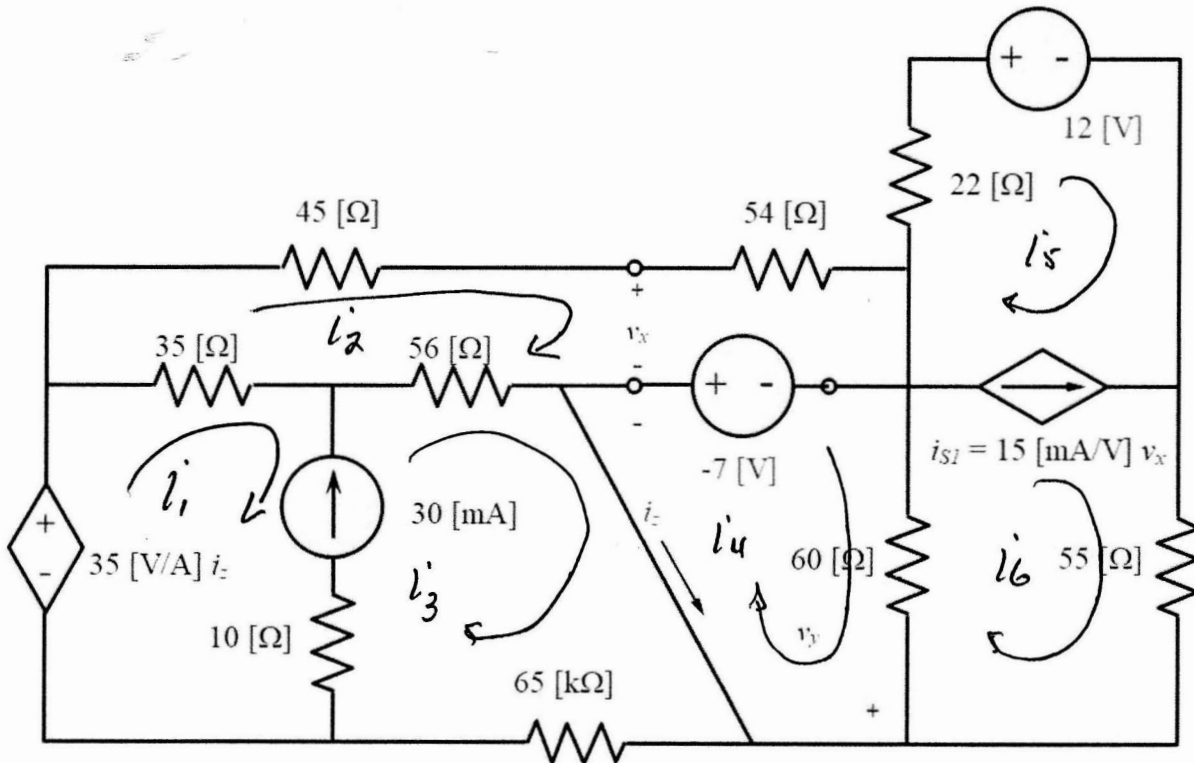


Super mesh:

1, 3     $35(i_1 - i_2) + 56(i_3 - i_2) + 65i_3 - 35i_2 = 0$
  +7

  +6      $i_3 - i_1 = 30 \text{ [mA]}$

Super mesh:

5, 6    +7    $12 + 55i_6 + 60(i_6 - i_4) + 22i_5 = 0$

  +6         $i_6 - i_5 = 0.015 \, v_x$

$i_2$:    +9    $99i_2 + 7 + 56(i_2 - i_3) + 35(i_2 - i_1) = 0$

$i_4$:    +6    $-7 + 60(i_4 - i_5) = 0$

$v_X$ Equation:

$\quad -v_X + i_2 * 54[\Omega] - (-7[V]) = 0$

$i_Z$ Equation:

$\quad i_Z = i_3 - i_4$