

ECE 201 – Fall 2009

Final Exam

December 16, 2009

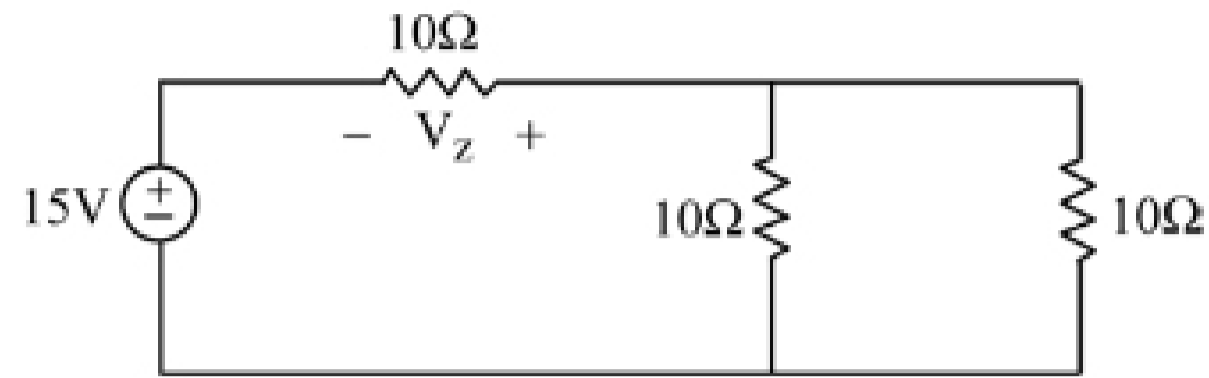
Division 0101: Tan (11:30am)
Division 0201: Clark (7:30 am)
Division 0301: Elliott (1:30 pm)

Instructions

1. DO NOT START UNTIL TOLD TO DO SO.
2. Write your Name, division, professor, and student ID# (PUID) on your scantron sheet.
3. This is a CLOSED BOOKS and CLOSED NOTES exam.
4. There is only one correct answer to each question.
5. Calculators are allowed (but not necessary). Please clear any formulas, text, or other information from your calculator memory prior to the exam.
6. If extra paper is needed, use back of test pages.
7. Formulas are given on the final page of this exam.
8. Cheating will not be tolerated. Cheating in this exam will result in an F in the course.
9. If you cannot solve a question, be sure to look at the other ones and come back to it if time permits.
10. As described in the course syllabus, we must certify that every student who receives a passing grade in this course has satisfied each of the course outcomes. On this exam, you have the opportunity to satisfy all outcomes. (See the course syllabus for a complete description of each outcome.) On the chart below, we list the criteria we use for determining whether you have satisfied these course outcomes. You only need to satisfy the outcomes once during the course, so any outcomes that you satisfied previously will remain satisfied, independent of your performance on this exam.

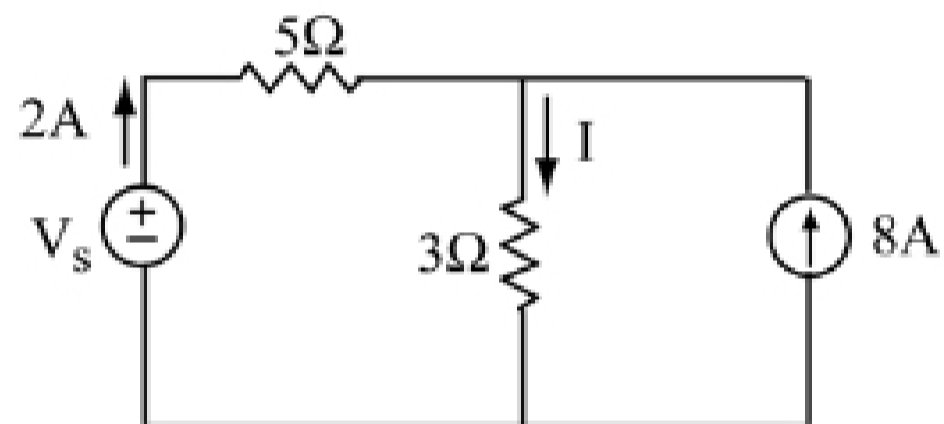
Course Outcome	Exam Questions	Minimum correct answers required to satisfy the course outcome
i	1-3, 5	2
ii	16	1
iii	4, 9, 18, 27	2
iv	6-7	1
v	11-18	4
vi	19-22	2
vii	23-26	2
viii	27	1
ix	8-10	1

1. Determine the voltage V_z .



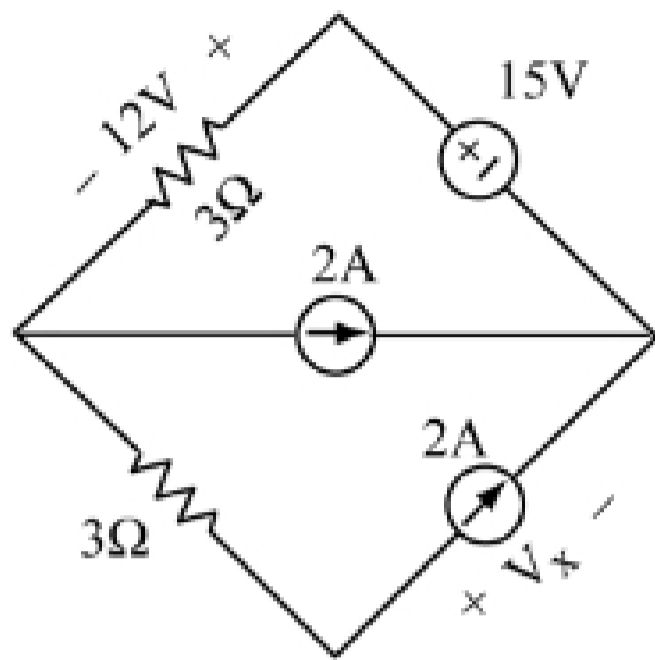
- (1) $-15V$ (2) $-10V$ (3) $-7.5V$
(4) $-5V$ (5) 0 (6) $5V$
(7) $7.5V$ (8) $10V$ (9) $15V$

2. For the circuit shown below, the current I is:



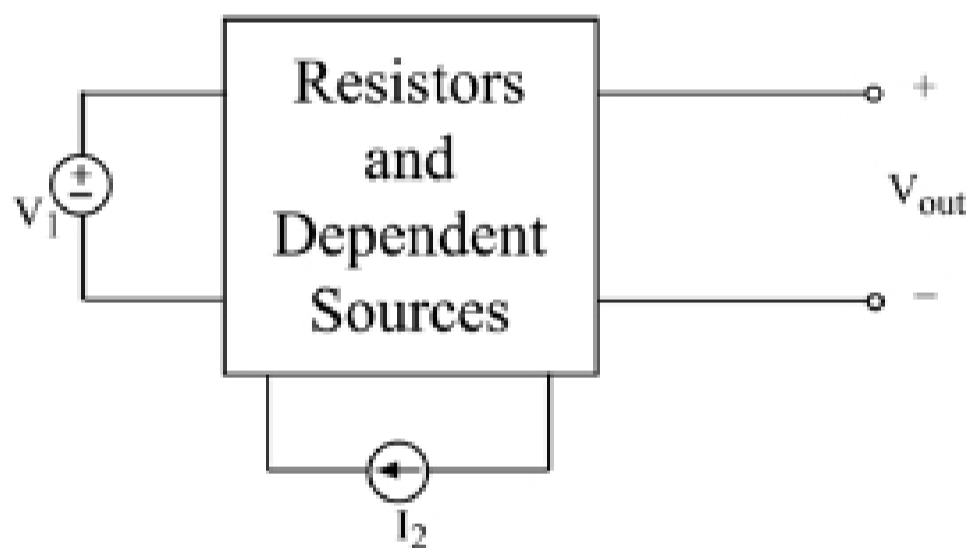
- (1) $0A$ (2) $2A$ (3) $5A$
(4) $-6A$ (5) $6A$ (6) $-10A$
(7) $10A$

3. The voltage V_x in the circuit shown below is:



- (1) $-33V$ (2) $-21V$ (3) $-9V$
 (4) $-3V$ (5) $3V$ (6) $9V$
 (7) $21V$ (8) $33V$

4. The circuit shown below has two independent sources V_1 and I_2 .



The output voltage V_{out} has been measured for two combinations of input sources:

V_1	I_2	V_{out}
2 V	5 A	12 V
4 V	-2.5 A	-1 V

What would the value of V_{out} be for $V_1 = 1 V$ and $I_2 = 1 A$?

- (1) 1 V (2) 2 V (3) 3 V (4) 4 V
 (5) 5 V (6) 6 V (7) 0 V