

**Instructor:**

Asst. Prof. Onur Kurt

**Student Name:**

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**Date:**

**ITU**

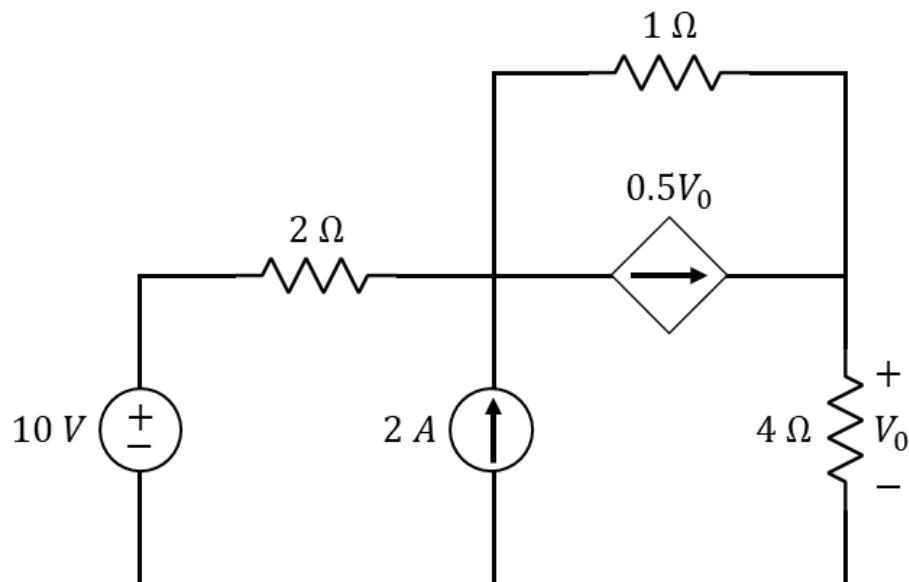
**EEF 211E: Basics of Electrical Circuits (Fall 2022)**

**Homework #3**

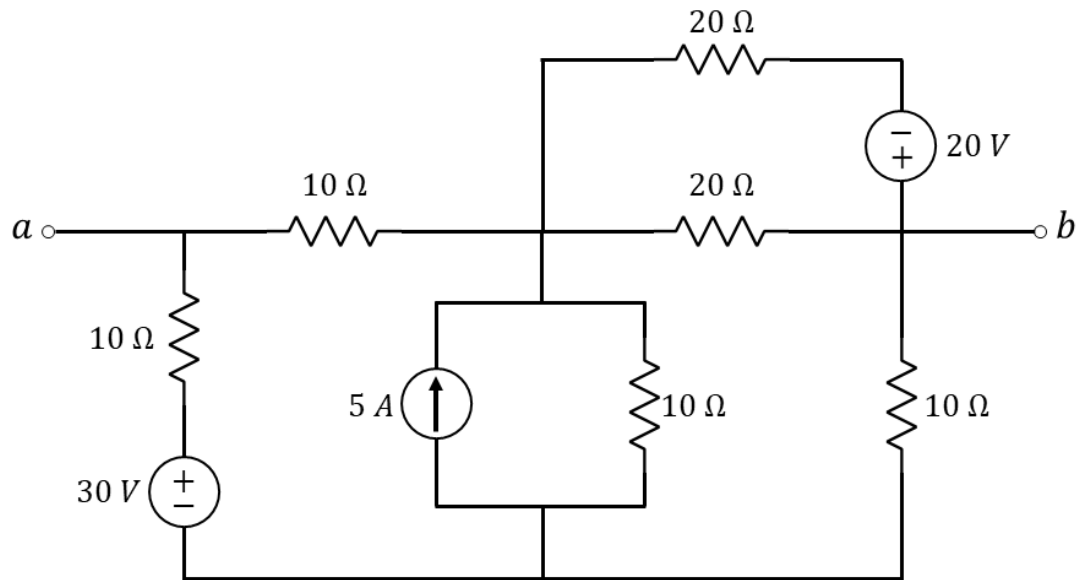
**Grading Policy:**

- You must submit your homework assignment to the course teaching assistant (TA) before its due date. Late homework will not be accepted/graded.
- Homework should be written clearly and legibly. Your answers should show step-by-step solution of each question. Messy and illegible homework may not be graded.
- You must not ask for answers directly from any aide.
- Academic dishonesty is unacceptable. Plagiarism and cheating on the homework assignment will result in a zero grade.

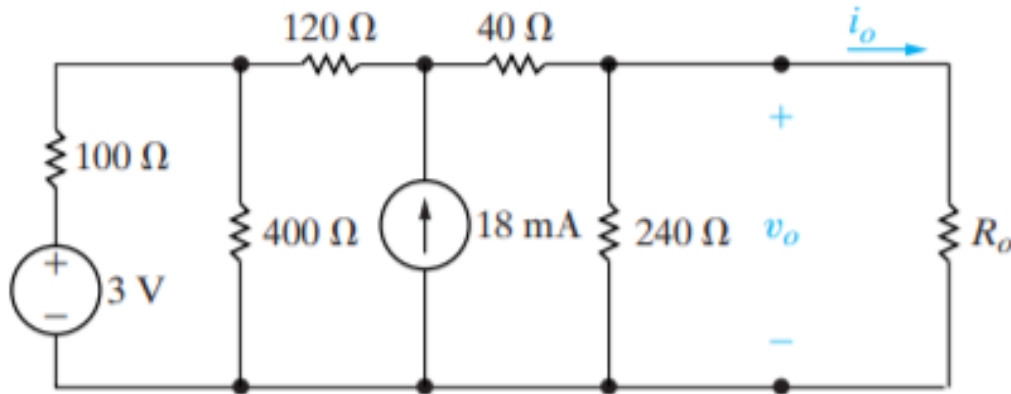
**Question 1-)** For the circuit given in Figure below, employ superposition to determine the value of  $V_0$ .



**Question 2-** For the circuit given in Figure below, find the Thevenin equivalent between terminals a and b.



**Question 3-**) Determine  $i_o$  and  $v_o$  in the circuit shown below when  $R_o$  is a resistor whose values are from the common standard resistor values table such that  $100\ \Omega \leq R_o \leq 200\ \Omega$ . Here, ignore the tolerances of resistor values, just use the nominal resistance values. (Hint: Find the Thevenin or Norton equivalent circuit with respect to the terminals of  $R_o$  and use it in the simulation process.)



Resistors (5% tolerance)[ $\Omega$ ]					
10	100	1.0 k	10k	100k	1.0 M
	120	1.2 k	12 k	120 k	
15	150	1.5 k	15 k	150 k	1.5 M
	180	1.8 k	18 k	180 k	
22	220	2.2 k	22 k	220 k	2.2 M
	270	2.7 k	27 k	270 k	
33	330	3.3 k	33 k	330 k	3.3 M
	390	3.9 k	39 k	390 k	
47	470	4.7 k	47 k	470 k	4.7 M
	560	5.6 k	56 k	560 k	
68	680	6.8 k	68 k	680 k	6.8 M