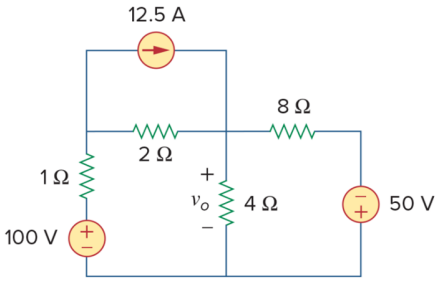
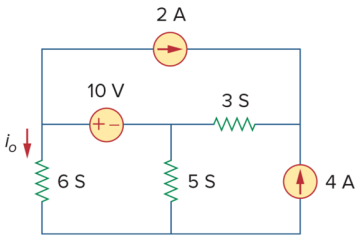
EE1002 Tutorial 5

(Questions from the Textbook by Alexander & Sadiku, 7th edition Problems 3.14, 3.15, & 3.38)

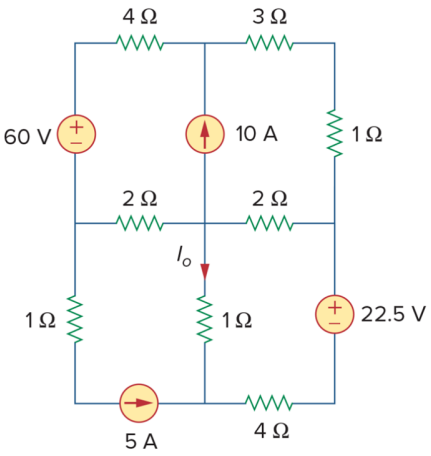
1. Using nodal analysis, find v_o in the following circuit:



2. Apply nodal analysis to find i_o and the power dissipated in each resistor in the circuit of the following figure (the unit of S is called Seimens, which is the reciprocal of the unit Ω, e.g., 0.5S = 2Ω):



3. Apply mesh analysis to the following circuit and obtain I_o.



Answers:

1. $v_o = 50$ V.
2. $i_o = 29.45$ A; $P_{6S} = 144.6$ W; $P_{5S} = 129.6$ W; and $P_{3S} = 12$ W.
3. $I_o = -6.375$ A.