EXPERIMENT 3

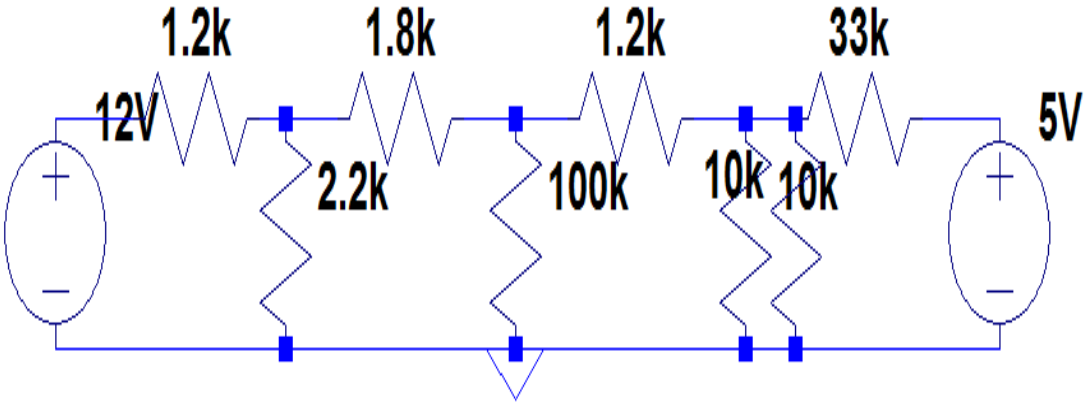
NODE VOLTAGE ANALYSIS USING LTSPICE

OBJECTIVE

This experiment is aimed at learning node voltage analysis in LTSpice.

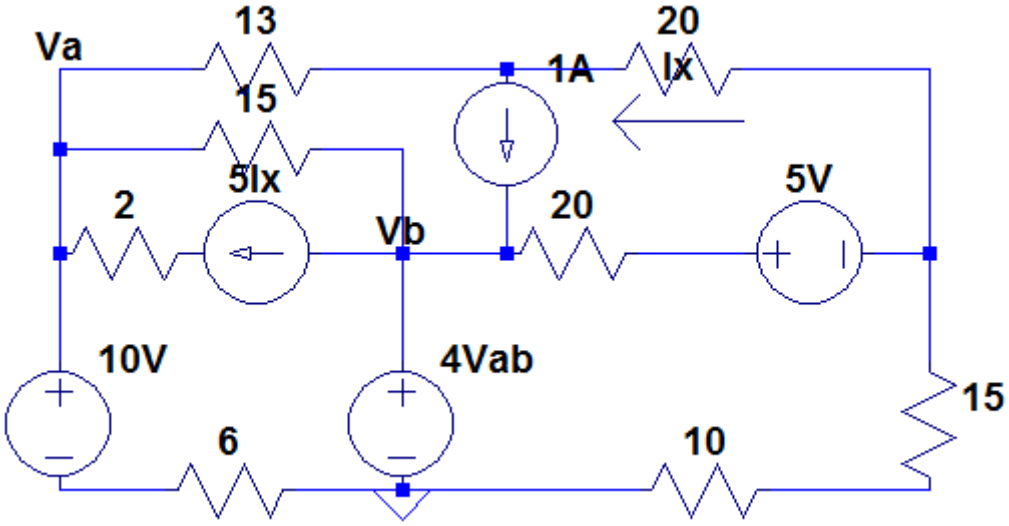
TASKS

1. Implement the following circuit in LTSpice. Locate all the nodes and find out the node voltages.



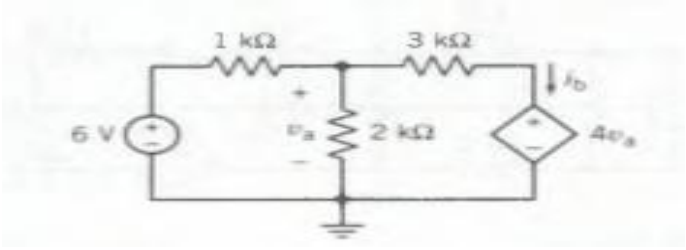
   Implement the above circuit on breadboard and find the node voltages using voltmeter. Also, solve for the node voltages using analytical equations.

2. Implement the following circuit in LTSpice. Locate all the nodes and find out the node voltages.



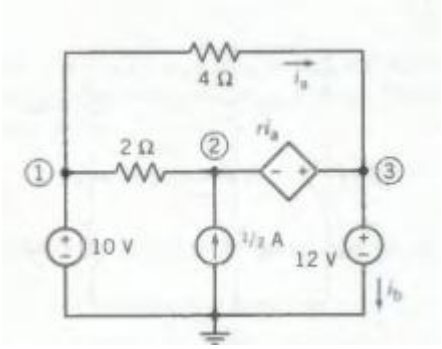
NUMERICAL PROBLEMS

A. Find Ib for the circuit shown below.

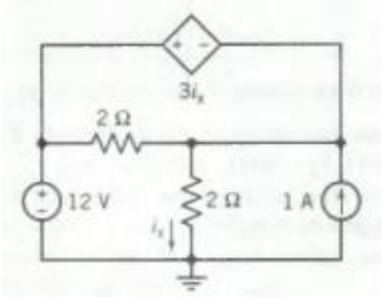


B. The circled numbers in the figure below are node numbers. The node voltages of this circuit are v1= 10V, v2= 14V and v3=12V.

a. Determine the value of current ib.
b. Determine the value of r, the gain of CCVS.



C. Determine the value of current ix in the circuit shown below.



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