# Homework 1

Due date: Oct. 8th, 2024 at 10 p.m.

Turn in your hard-copy hand-writing homework at the entrance of the School of Information, Room 3-324.

Rules:

- Work on your own. Discussion is permissible, but extremely similar submissions will be judged as plagiarism.

- Please show all intermediate steps: a correct solution without an explanation will get zero credit.

- Please submit on time. No late submission will be accepted.

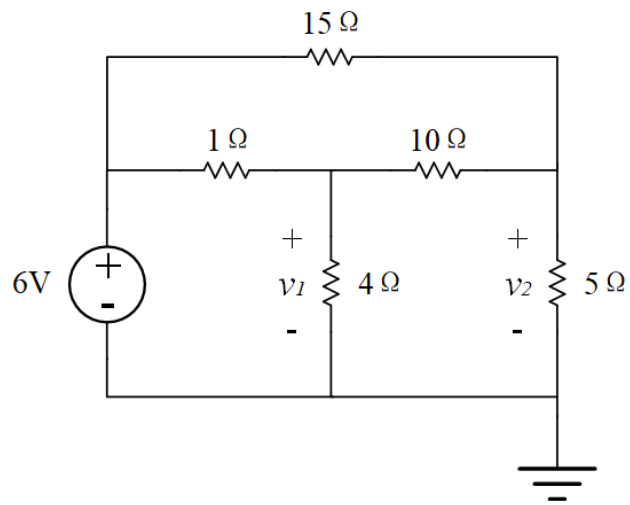- Please prepare your submission in English only. No Chinese submission will be accepted.
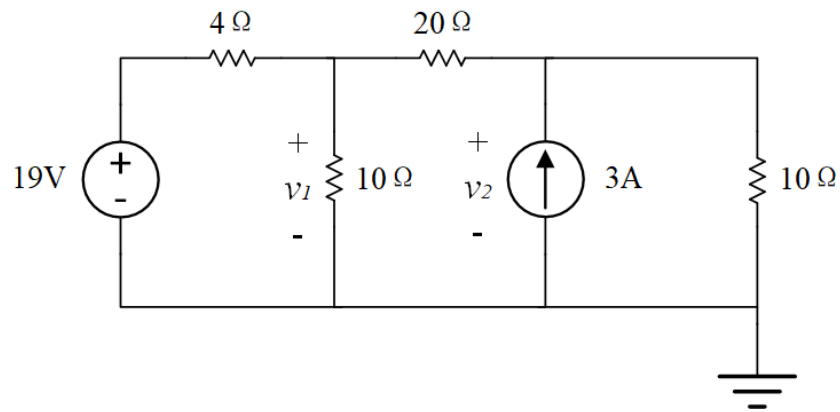
1. Find v_0 using Kirchoff's laws.
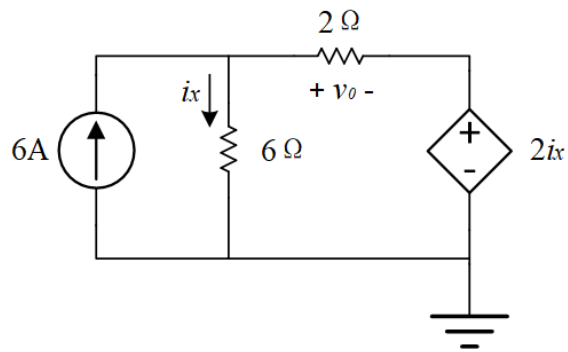
2. (a) Use Delta-to-Y or Y-to-Delta transformation to find the i_o in the circuit.

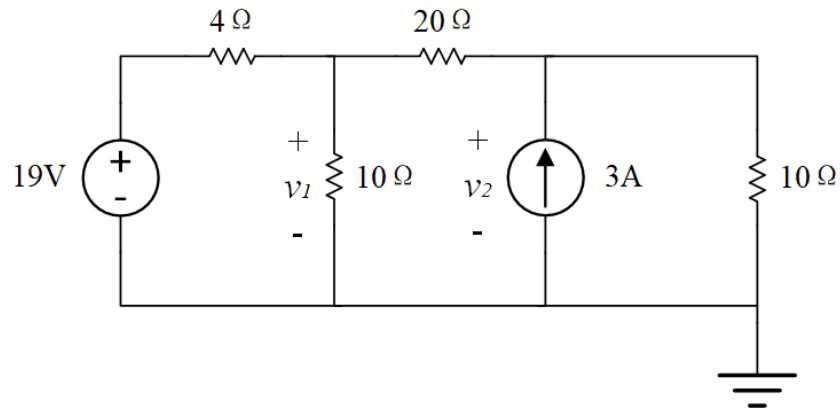(b) Calculate the equivalent resistance R_{ab}.
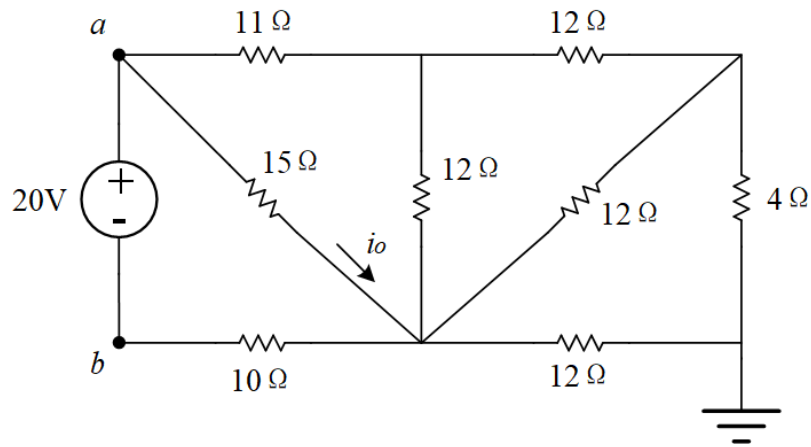
3. Use nodal analysis method to find v_1 and v_2 in the circuit.

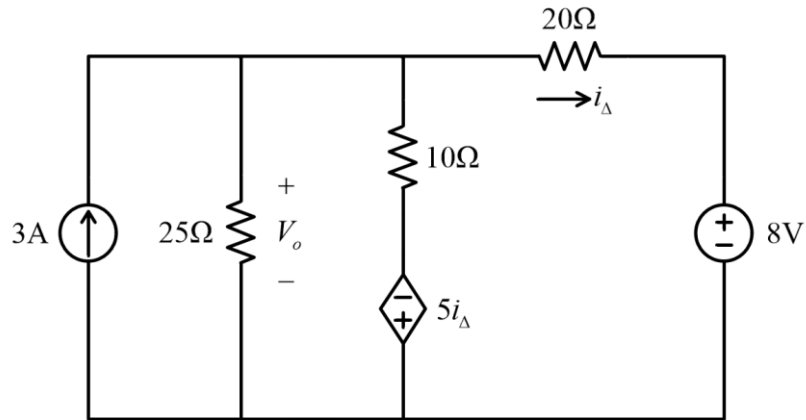4. Use nodal analysis method to find v_1 and v_2 in the circuit.

5. For the circuit below, use mesh current analysis method to find v_1 and v_2 in the circuit.

6. For the circuit below:

(a) Use the nodal method to find V_o in the circuit.

(b) Draw or copy the circuit on your own answer sheet, and use the mesh method to find V_o in the circuit.

(c) Find the power absorbed by the dependent source.

7. Use mesh analysis to find U_a, U_b and the power delivered by the two controlled sources.