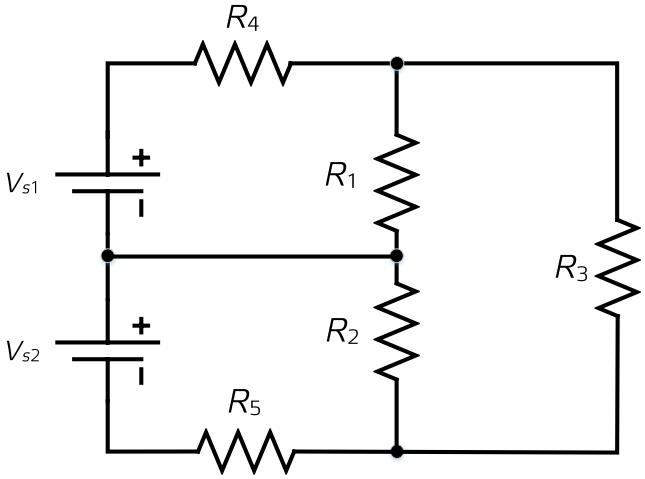
Homework Assignment 2 – Network Analysis

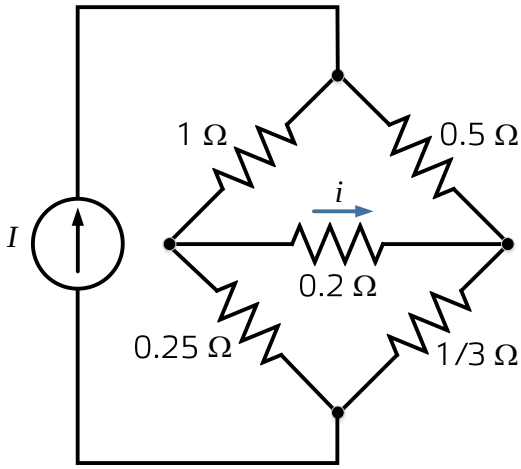
Problem 1 (25 pts) – Node Voltage Method

Use node voltage method to **determine the voltage on** R_3. The known quantities are: $V_{S1} = V_{S2} = 450$ V, $R_4 = R_5 = 0.25\ \Omega$, $R_1 = 8\ \Omega$, $R_2 = 5\ \Omega$, $R_3 = 32\ \Omega$.



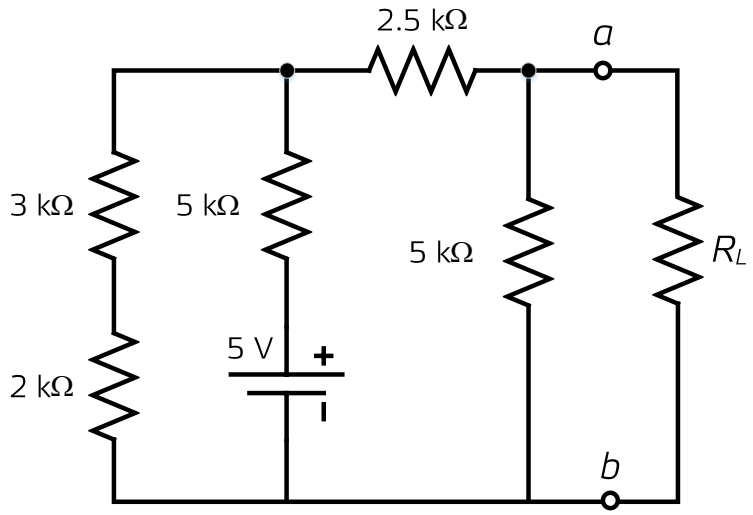
Problem 2 (25 pts) – Mesh Current Method

Using mesh current method, **find the current** i in the circuit shown below.



Problem 3 (25 points) – Thevenin Circuits

Find the Thevenin equivalent circuit for the network shown below, as seen by the load resistor R_L.



Problem 4 (25 points) – Norton Circuit

Find the Norton equivalent circuit for the network shown below, as seen by the load resistor R_L.