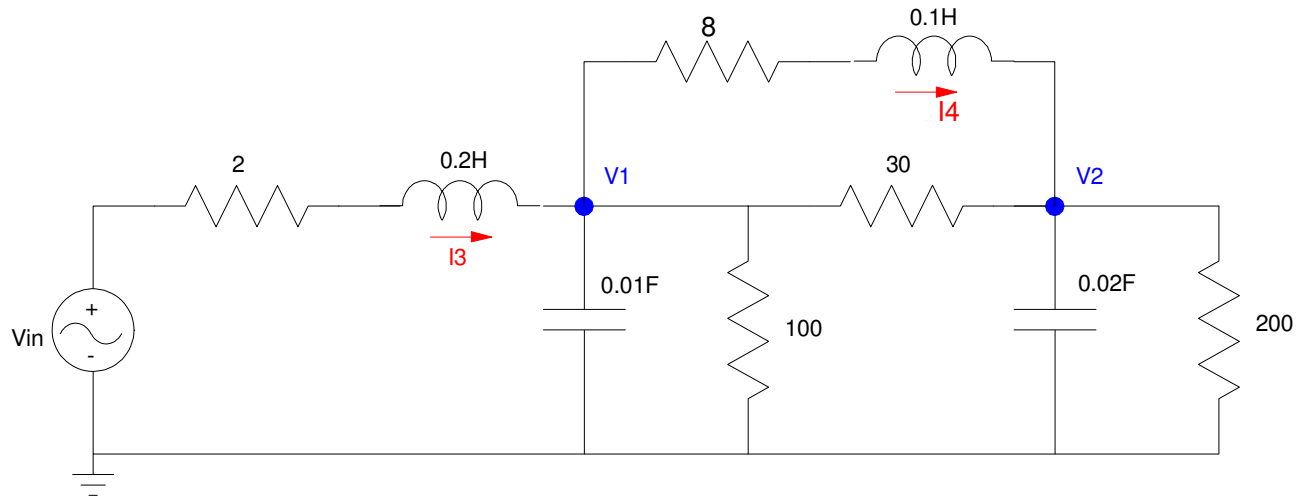# ECE 461/661 Handout #14

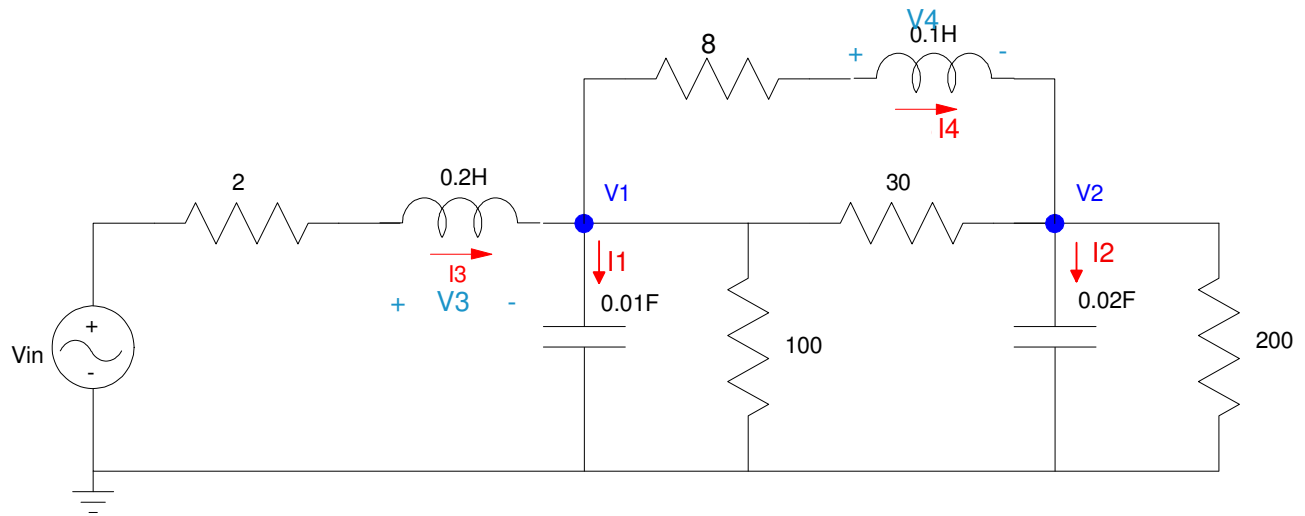Dynamics for Electrical Circuits

Write the differential equations for the following RLC circuit

Dynamics for Electrical Circuits

ECE 461/661 - Handout for Lecture #14

Write the differential equations for the following RLC circuit

$$I_1 = 0.01\dot{V}_1 = I_3 - I_4 - \frac{V_1}{100} - \left(\frac{V_1 - V_2}{30}\right)$$

$$I_2 = 0.02\dot{V}_2 = \left(\frac{V_1 - V_2}{30}\right) + I_4 - \left(\frac{V_2}{200}\right)$$

$$V_3 = 0.2\dot{I}_3 = V_{in} - 2I_3 - V_1$$

$$V_4 = 0.1\dot{I}_4 = V_1 - 8I_4 - V_2$$