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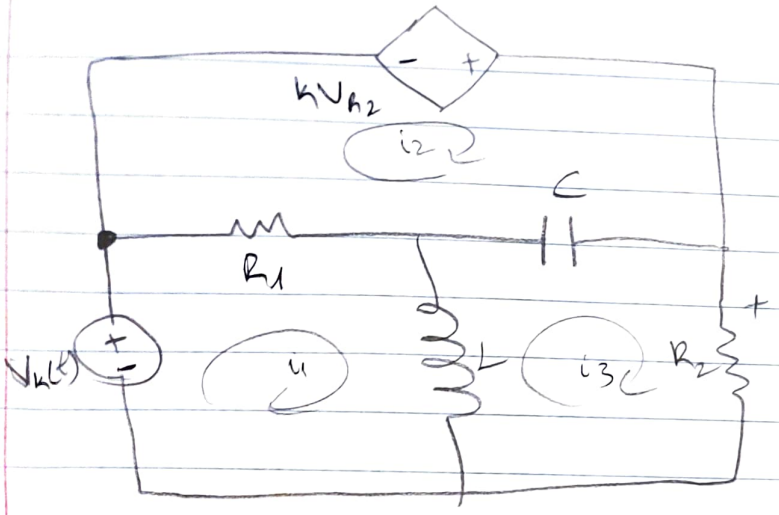
sena



current through inductor = i_L

Voltage across capacitor = V_C

$$V_{k(t)} - R_1(i_1 - i_2) - V_L = 0$$

$$kV_{R_2} - V_C - R_1(i_2 - i_1) = 0$$

$$-V_L - V_C - R_2 i_3 = 0$$

$$V_{k(t)} - R_1(i_1 - i_2) - L\frac{di_L}{dt} = 0$$

$$kV_{R_2} - V_C - R_1(i_2 - i_1) = 0$$

$$-L\frac{di_L}{dt} - \frac{Q}{C} - R_2 \cdot i_3 = 0$$