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Started on	Tuesday, 10 August 2021, 12:20 PM
State	Finished
Completed on	Tuesday, 10 August 2021, 12:45 PM
Time taken	24 mins 47 secs
Grade	0.00 out of 10.00 (0%)

Question 1

Incorrect

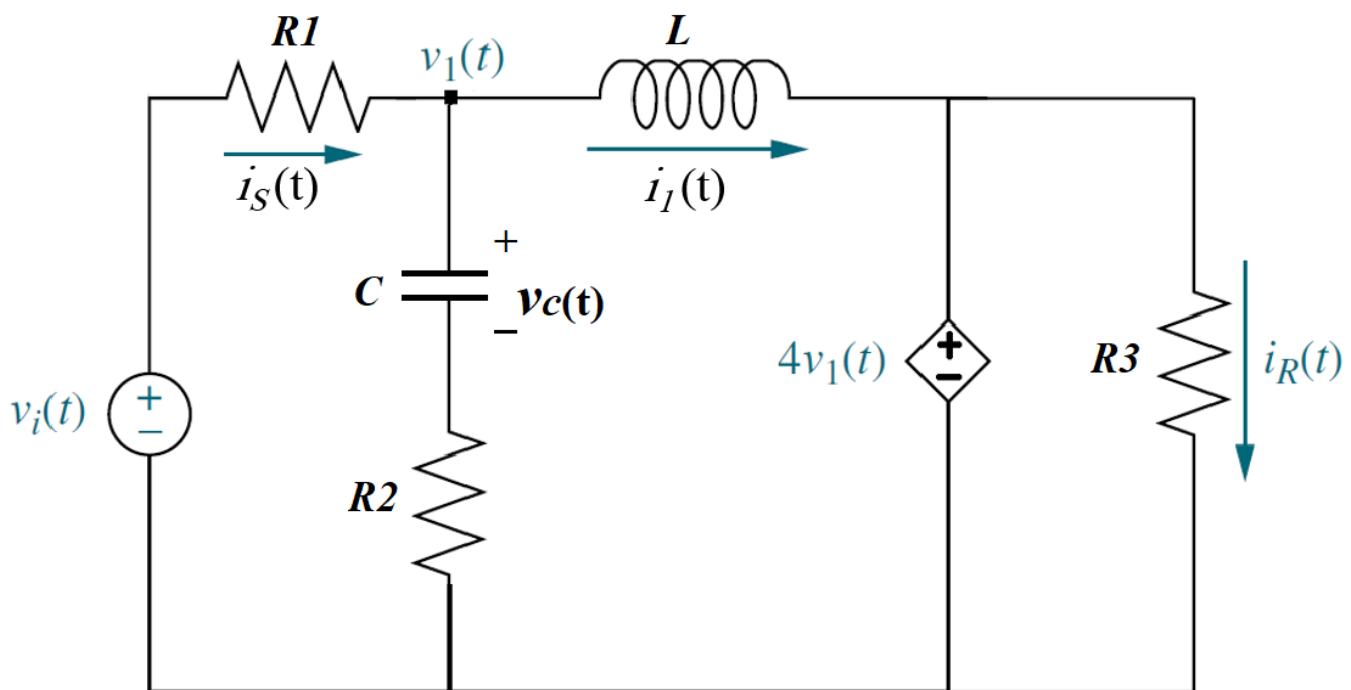
Mark 0.00 out of 10.00

Answer the questions below, (Insert the numerical value only, do not use <, >, +, *, or /)

The Relative error for your answer should be less than 0.01, which means if the answer was 50, then the error should not exceed $50 * 0.01 = \pm 0.5!$

if the answer was 230, then the error should not exceed $230 * 0.01 = \pm 2.3!$

if the answer was $2.31467 * 10^{-3}$, then you should enter this value: 0.00231467, not this 0.0023 !!!!



$$\begin{bmatrix} \frac{d}{dt} v_C(t) \\ \frac{d}{dt} i_1(t) \end{bmatrix} = \begin{bmatrix} A & B \\ C & D \end{bmatrix} \begin{bmatrix} v_C(t) \\ i_1(t) \end{bmatrix} + \begin{bmatrix} E \\ F \end{bmatrix} v_i(t)$$

$$i_R(t) = \begin{bmatrix} G & H \end{bmatrix} \begin{bmatrix} v_C(t) \\ i_1(t) \end{bmatrix} + \begin{bmatrix} I \end{bmatrix} v_i(t)$$

If $R1=5$ ohm, $R2=17$ ohm, $R3=5$ ohm, $L=0.75$ H and $C=0.725$ F. Represent the electrical network shown here in state space, where $i_R(t)$ is the output. Use the current through the inductor and the voltage across the capacitor as state variables. **Follow the order of the equations provided in this figure in order to find the constants from A to I.**

The value of the constant A is:



One possible correct answer is: -0.06269592476489

The value of the constant B is:

✘

One possible correct answer is: -0.31347962382445

The value of the constant C is:

✘

One possible correct answer is: -0.909090909091

The value of the constant D is:

✘

One possible correct answer is: 15.4545454545

The value of the constant E is:

✘

One possible correct answer is: 0.06269592476489

The value of the constant F is:

✘

One possible correct answer is: -3.09090909091

The value of the constant G is:

✘

One possible correct answer is: 0.181818181818

The value of the constant H is:

✘

One possible correct answer is: -3.09090909091

The value of the constant I is:



One possible correct answer is: 0.61818181818182

◀ Quiz #3

Quiz #5 ▶

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