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Question 1

Not yet answered

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What is the Laplace transform of $2tu(t - 4)$?

Select one:

- a. $\frac{2e^{-4s}}{s^2}$
- b. $\left(\frac{2}{s^2} + \frac{4}{s}\right)e^{-4s}$
- c. $\frac{2}{s^2}$
- d. $\left(\frac{2}{s^2} + \frac{8}{s}\right)e^{-4s}$

Question 2

Not yet answered

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What is the Laplace transform of $\cos(\pi t)\delta(t - 2)$?

Select one:

- a. ∞
- b. e^{-2s}
- c. 1
- d. 0

Question 3

Not yet answered

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Obtain the Laplace transform of $(t + t^2 + t^3)u(t)$.

Select one:

- a. $\frac{s^2 + 2s + 6}{s^4}$
- b. $\frac{s^2 + s + 1}{s^4}$
- c. $\frac{1}{s^2} + \frac{2}{s^3} + \frac{3}{s^4}$
- d. $\frac{1}{s^4}$

Question 4

Not yet answered

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Calculate the initial and the final values of $f(t)$, given that

$$F(s) = \frac{s^2 + 3}{s^3 + 4s^2 + 6}$$

Select one:

Edit question

- a. 1 and 0
- b. 0 and 0.5
- c. ∞ and 0
- d. 0 and ∞

Question 5

Not yet answered

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What is the inverse Laplace transform of

$$\frac{s^2 - 2s + 4}{(s + 1)(s + 2)^2} ?$$

Select one:

- a. $(5e^{-t} - 2te^{-2t} - 9e^{-2t})u(t)$
- b. $(7e^{-t} - 12te^{-2t} - 6e^{-2t})u(t)$
- c. $(2e^{-t} - 4te^{-2t} - 5e^{-2t})u(t)$
- d. $(14e^{-t} - te^{-2t} - 10e^{-2t})u(t)$

Question 6

Not yet answered

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What is the inverse Laplace transform of

$$\frac{s^2 + 1}{(s + 3)(s^2 + 4s + 5)} ?$$

Select one:

- a. $(5e^{-3t} - 4e^{-2t} \sin t)u(t)$
- b. $(4e^{-3t} - 5e^{-2t} \cos t)u(t)$
- c. $(5e^{-3t} - 4e^{-2t} \cos t)u(t)$
- d. $(4e^{-3t} - 5e^{-2t} \sin t)u(t)$

Question 7

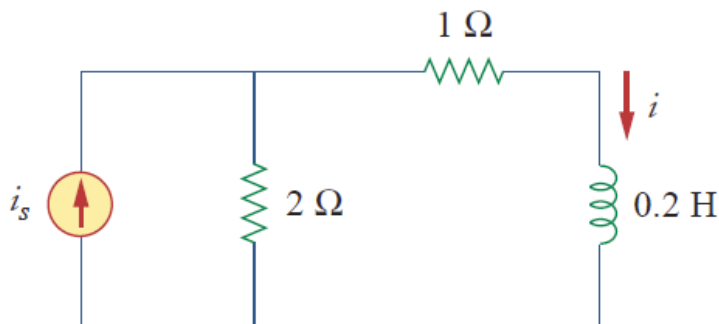
Not yet answered

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Obtain the transfer function $\frac{I(s)}{I_s(s)}$ of the following circuit.



Select one:

- a. $\frac{2}{s + 3}$

- b. $\frac{10}{s + 10}$
- c. $\frac{10}{s + 5}$
- d. $\frac{10}{s + 15}$

Question 8

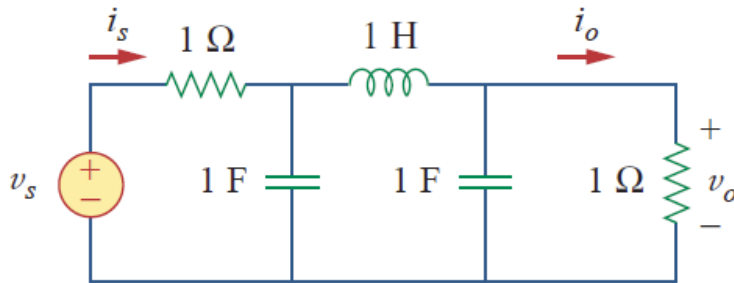
Not yet answered

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Obtain the transfer function $\frac{V_o(s)}{V_s(s)}$ of the following circuit.



Select one:

- a. $\frac{1}{(s + 2)(s^2 + 4s + 5)}$
- b. $\frac{1}{(s + 2)(s^2 + 2s + 1)}$
- c. $\frac{1}{(s + 1)(s^2 + 2s + 5)}$
- d. $\frac{1}{(s + 1)(s^2 + s + 2)}$

Question 9

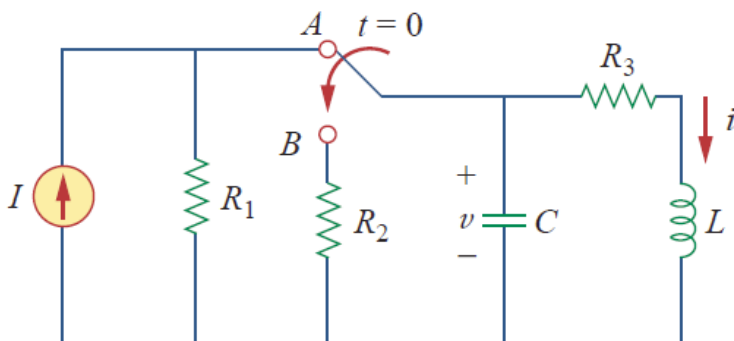
Not yet answered

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For the following circuit, calculate the initial value of the inductor's current, $i(0)$.



Select one:

- a. $\frac{R_1 I}{R_1 + R_3}$
- b. $\frac{R_1 I}{R_1 + R_2 + R_3}$
- c. $\frac{R_3 I}{R_1 + R_2 + R_3}$
- d. $\frac{R_3 I}{R_1 + R_3}$

Question 10

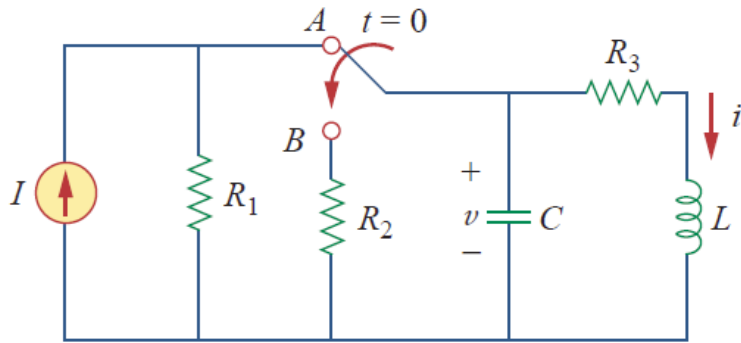
Not yet answered

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For the following circuit, calculate the initial value of the capacitor's voltage, $v(0)$.



Select one:

- a. $\frac{R_1 R_3 I}{R_1 + R_3}$
- b. $\frac{R_1 R_2 I}{R_1 + R_2 + R_3}$
- c. $\frac{R_2 R_3 I}{R_1 + R_3}$
- d. $\frac{R_1 R_3 I}{R_1 + R_2 + R_3}$

Next

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