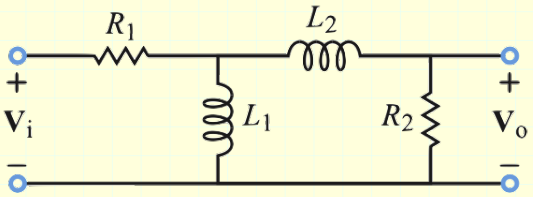
Problem 3.30 :

Given: The values $R_1 = 1\Omega, R_2 = 2\Omega, L_1 = 1mH$, and $L_2 = 2mH$; and given the circuit below



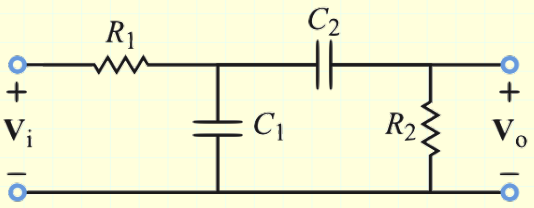
Find:

a. $H(s) = \frac{V_o}{V_i}$

b. $h(t)$

Problem 3.31 :

Given: The values $R_1 = 1\Omega$, $R_2 = 2\Omega$, $C_1 = 1\mu F$, and $C_2 = 2\mu F$; and given the circuit below



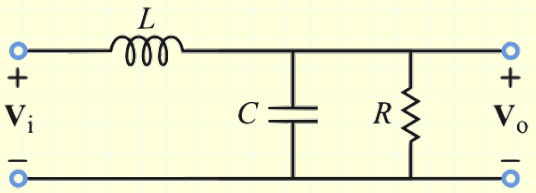
Find:

a. $H(s) = \frac{V_o}{V_i}$

b. $h(t)$

Problem 3.32 :

Given: The values $R = 5\Omega$, $L = 0.1mH$, and $C = 1\mu F$; and given the circuit below



a. $H(s) = \frac{V_o}{V_i}$

b. $h(t)$

Find:

Problem 3.33 :

Given: An LTI system is described by the LCCDE

$$\frac{d^2y}{dt^2} - 5\frac{dy}{dt} + 6y = \frac{dx}{dt} + 5x. \tag{1}$$

Find: Is the system BIBO stable?

Problem 3.36 :

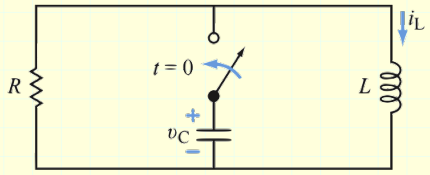
Given: An LTI system has transfer function

$$H(s) = \frac{(s+1)(s+2)}{s(s+3)} \tag{2}$$

Find: Is it BIBO stable?

Problem 4.8 :

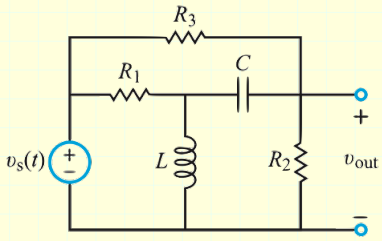
Given: Before closing the switch $v_C(0^-) = 24V$. Also, the element values are $R = 1\Omega$, $L = 0.8H$, and $C = 0.25F$.



Find: The equation for $i_L(t)$

Problem 4.9 :

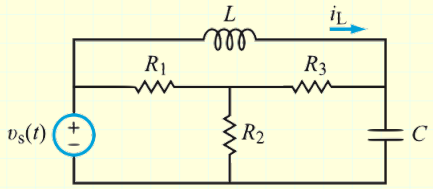
Given:



Find:

Problem 4.11 :

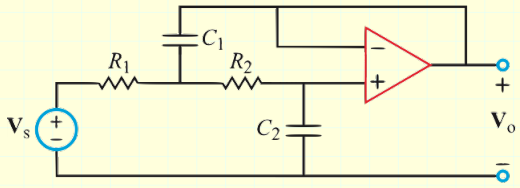
Given:



Find:

Problem 4.32 :

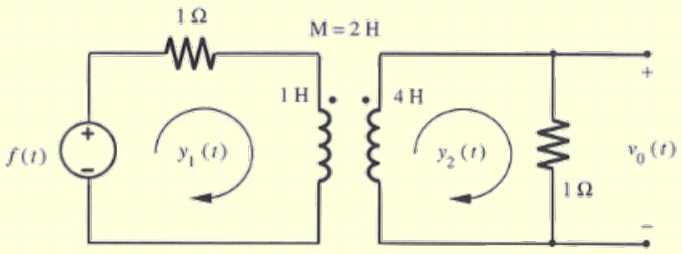
Given:



Find:

Problem 11. :

Given:



Find: