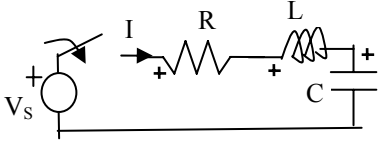


Elek.Devre II			Ödev No				8				
Adı Soyadı:											
Öğrenci No:		1		0	5	0	7	0			
		0	0			0		0	0		
		1	1			1		1	1		
		2				2		2	2		
		3				3		3	3		
		4				4		4	4		
		5				5		5	5		
		6				6		6	6		
		7				7		7	7		
		8				8		8	8		
		9				9		9	9		

1) Sekildeki devre Laplas domeni teknigi kullanilarak cozulmek isteniyor. $R=3\Omega$, $C=0.1$ (Farad), $L=2$ (henry), $V_s=20V$. $I_L(0)=10A$, $V_C(0)=5V$

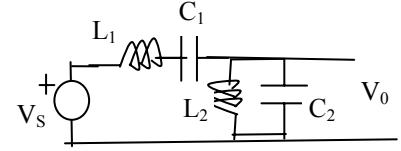
a) Devrenin s-domeni esdegerini cizin. b) Gerekli cevve ve dugum denklemlerini yazin. c) I akiminin s-domeni karsilini hesaplayin. d) I akiminin zamana bagli ifadesini bulun.



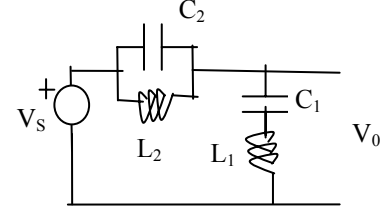
2) 1. soruda $V_s=20 \cos(8t)V$ olmasi hali icin tekrarlayin.

3) Sekildeki devrelerde $H(s) = \frac{V_0(s)}{V_s(s)}$ transfer fonksiyonunu bulun.

a)

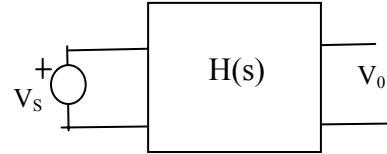


b)



4) Sekildeki devrede $H(s) = \frac{s+2}{s^2+4s+13}$ seklinde

veriliyor. a) $V_s(t)=20u(t)$, b) $V_s(t)=20r(t)$, c) $V_s(t)=20\cos(8t)$, olmasi durumunda her bir durum icin $V_0(t)$ yi hesaplayin.



5) Dif denklemin Furier ve Laplas donusumunun varligini gosteren Tabloyu doldurun.

Dif Denklemler	Furier Donusumu	Laplas Donusumu
$\frac{dV_c}{dt} + 2V_c = V_s$	$j\omega V_c(j\omega) + V_c(j\omega) = V_s(j\omega)$	$s V_c(s) + V_c(s) = V_s(s)$
$\frac{dV_c}{dt} - 2V_c = V_s$	YOK	$s V_c(s) - V_c(s) = V_s(s)$
$\frac{d^2V_c}{dt^2} + 4\frac{dV_c}{dt} + 13V_c = V_s$		
$\frac{d^2V_c}{dt^2} + 4\frac{dV_c}{dt} + 13V_c = -\frac{d^2V_s}{dt^2} + V_s$		
$\frac{d^2V_c}{dt^2} - 4\frac{dV_c}{dt} + 13V_c = V_s$		
$\frac{d^3V_c}{dt^3} + 3\frac{d^2V_c}{dt^2} + 4\frac{dV_c}{dt} + 13V_c = V_s$		
$\frac{d^3V_c}{dt^3} + 3\frac{d^2V_c}{dt^2} + 4\frac{dV_c}{dt} + 13V_c = V_s$		
$\frac{d^4V_c}{dt^4} + 25\frac{d^2V_c}{dt^2} + 144V_c = V_s$		