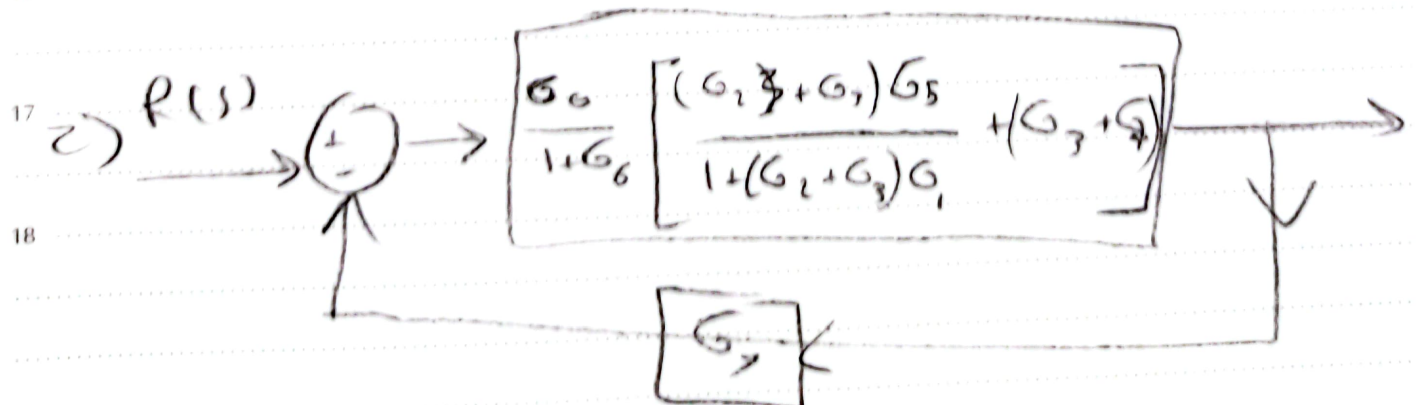
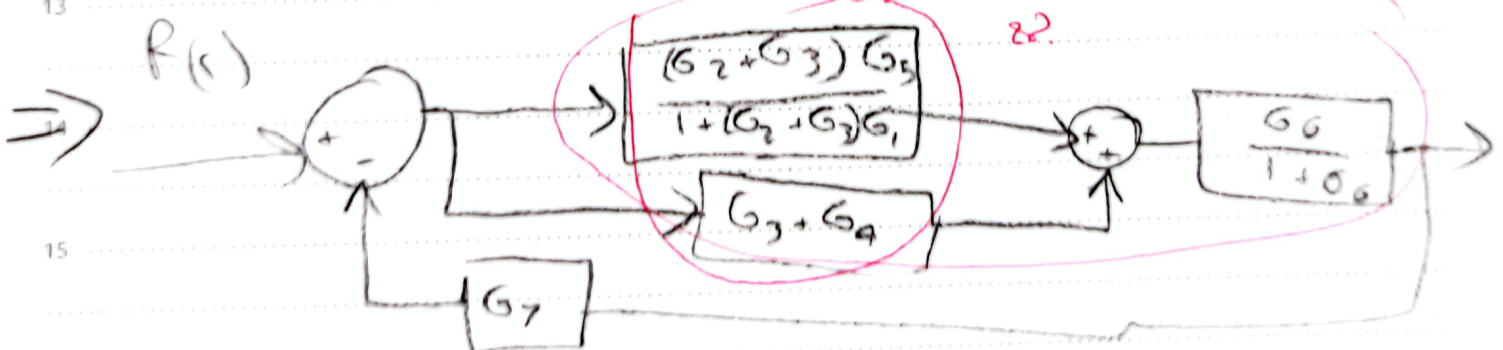
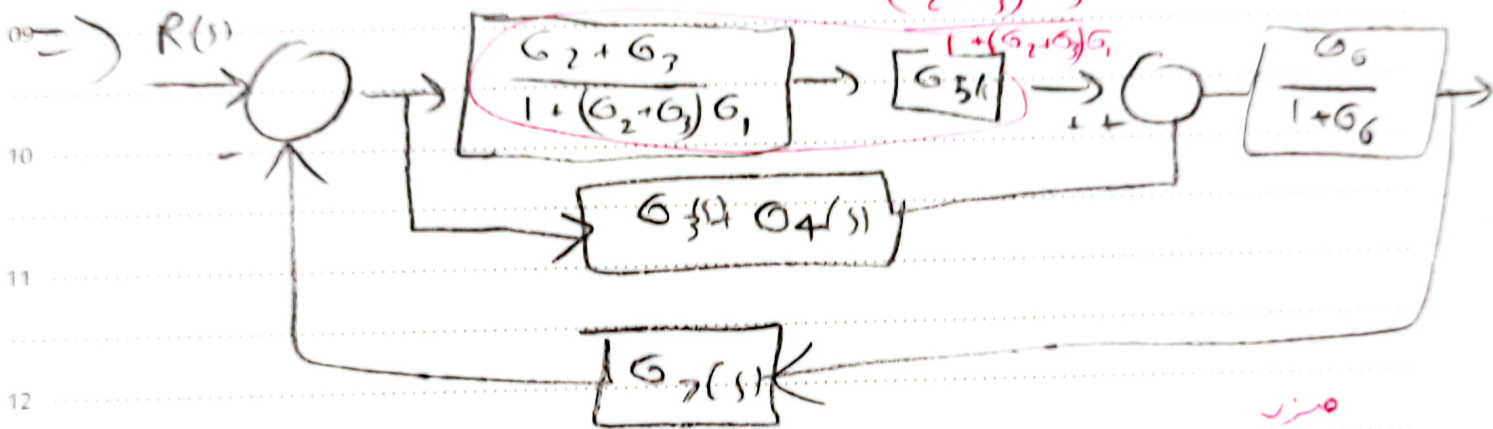
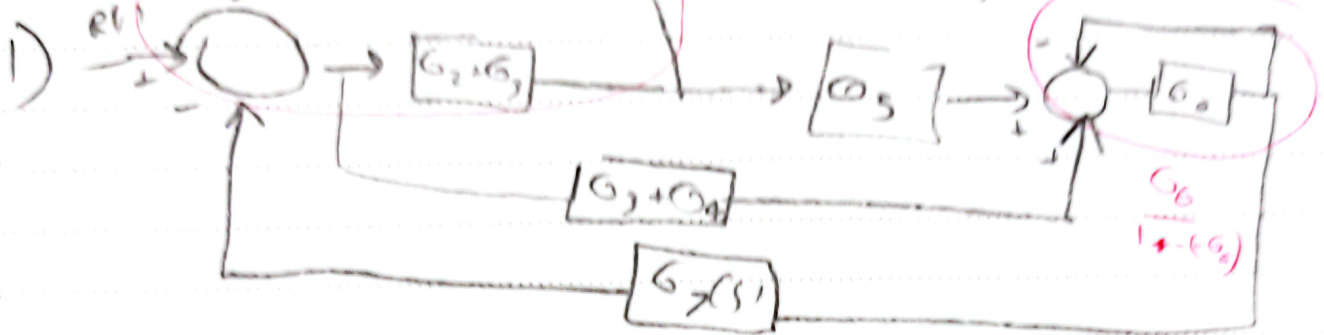


21.  
Oct./2020  
Wednesday

چهارشنبه

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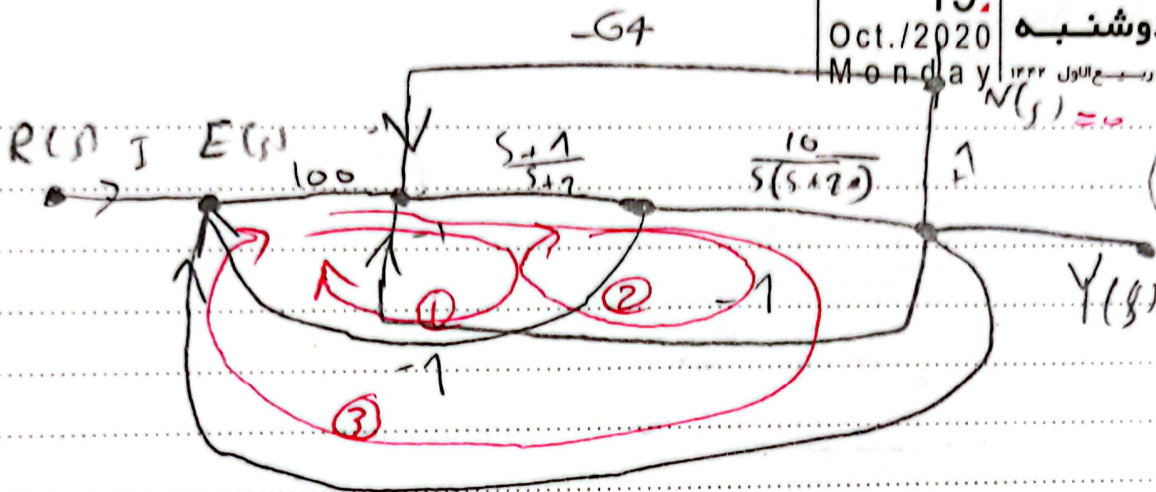
م  
سهننه  
٣ ربيع الاول ١٤٤٢

20  
Oct./2020  
Tuesday

$$\frac{C(s)}{R(s)} = \frac{G_6}{1+G_6} \left[ \frac{(G_2+G_3)G_5}{1+(G_2+G_3)G_1} + G_3 + G_4 \right]$$

$$1 - (-G_7) \frac{G_6}{1+G_6} \left[ \frac{(G_2+G_3)G_5}{1+(G_2+G_3)G_1} + G_3 + G_4 \right]$$

سوال (2)



ابتداءً،  $R(s)$ ،  $N(s)$ ،  $Y(s)$ ،  $E(s)$ ،  $G(s)$

$$M = \frac{y_{out}}{y_{in}} = \sum_{k=1}^N \frac{m_k \Delta_k}{\Delta}$$

$$\Delta_1 = 1 \quad M_1 = 100 \times \frac{s+1}{s+2} \times \frac{10}{s(s+2)} = \frac{1000(s+1)}{s(s+2)(s+2)}$$

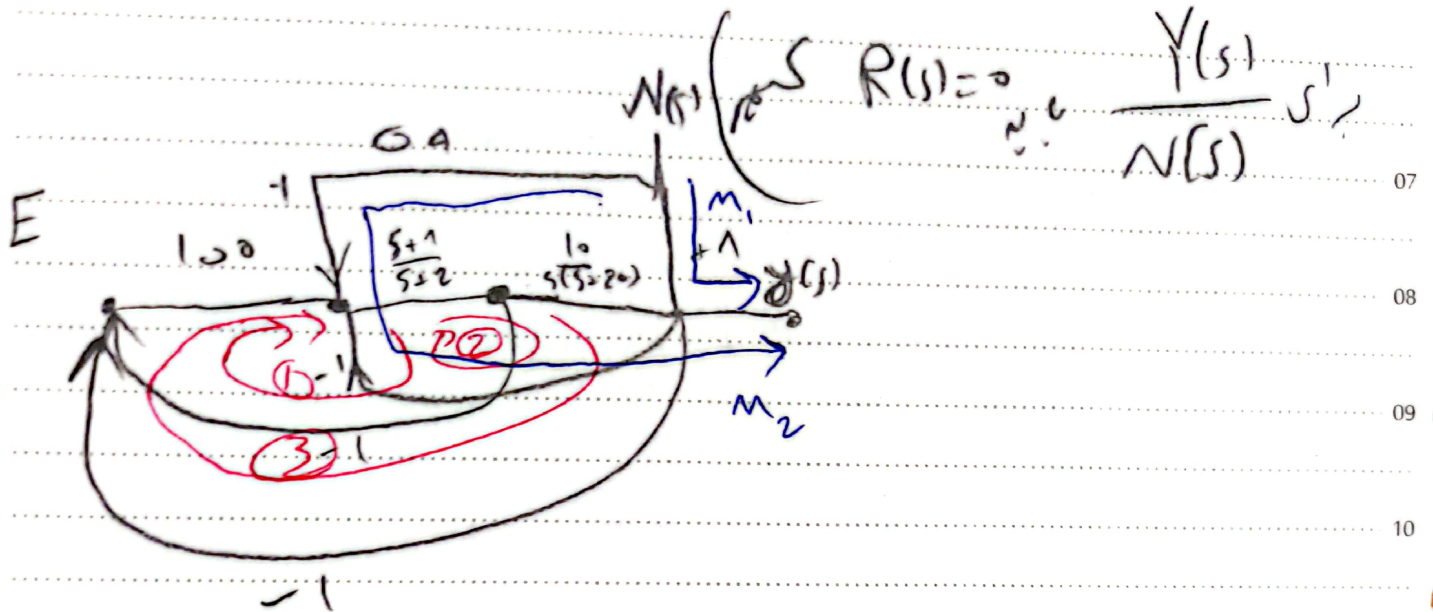
$$L_1 = -100 \frac{s+1}{s+2} \quad L_2 = \frac{-10(s+1)}{s(s+2)(s+2)}$$

$$L_3 = \frac{-1000(s+1)}{s(s+2)(s+2)}$$

$$\Delta = 1 - (L_1 + L_2 + L_3)$$

$$M = \frac{y(s)}{R(s)} = \frac{\Delta_1 M_1}{\Delta} = \frac{\frac{1000(s+1)}{s(s+2)(s+2)} E(s)}{1 - \left( -100 \frac{s+1}{s+2} - \frac{10(s+1)}{s(s+2)(s+2)} - \frac{1000(s+1)}{s(s+2)(s+2)} \right)}$$





$$M_1 = 1$$

$$M_2 = \frac{-G_4(s+1) 10}{(s+2)(s)(s+20)} = \frac{-10 G_4(s+1)}{s(s+2)(s+20)}$$

حاصل شده  $L_1, L_2, L_3$

$$\Delta_1 = 1 - (L_1 + L_2 + L_3) \quad \Delta_2 = 1$$

$$\Delta = \Delta_1$$

$$\frac{Y(s)}{N(s)} = \frac{\Delta + M_2}{\Delta} = 1 + \frac{M_2}{\Delta}$$

$$1 + \frac{-10 G_4(s+1)}{s(s+2)(s+20)} + \frac{100(s+1)}{s(s+2)(s+20)} + \frac{10(s+1)}{s(s+2)(s+20)}$$

$$Y(s) = \frac{Y(s)}{R(s)} R(s) + \frac{Y(s)}{N(s)} N(s)$$

هجرت حضرت رسول اکرم صلی الله علیه وآله وسلم از مکه به مدینه

صورت  $\frac{Y(s)}{N(s)}$  به صورت  $\frac{1}{s+1}$  می باشد

$$1 + \frac{-10G_4(s+1)}{s(s+2)(s+20)} + \frac{100(s+1)}{(s+2)} + \frac{10(s+1)}{s(s+2)(s+20)} + \frac{1000(s+1)}{s(s+2)(s+20)}$$

$$= 1 + \frac{100(s+1)}{s+2} + \frac{1010(s+1)}{s(s+2)(s+20)} - \frac{10G_4(s+1)}{s(s+2)(s+20)}$$

$$\frac{1}{s+1} + \frac{100(s+1)}{s+2} + \frac{1010(s+1)}{s(s+2)(s+20)} = \frac{10(s+1)G_4}{s(s+2)(s+20)}$$

$$\frac{s(s+2)(s+20)}{s+1} + 1010 + 100(s)(s+20) = 10G_4$$

$$G_4 = 101 + 10s(s+20) + \frac{s(s+2)(s+20)}{10(s+1)}$$