Problem 5.10 T(s) = C(s)/R(s) transfer fonksiyonunu bulunuz.

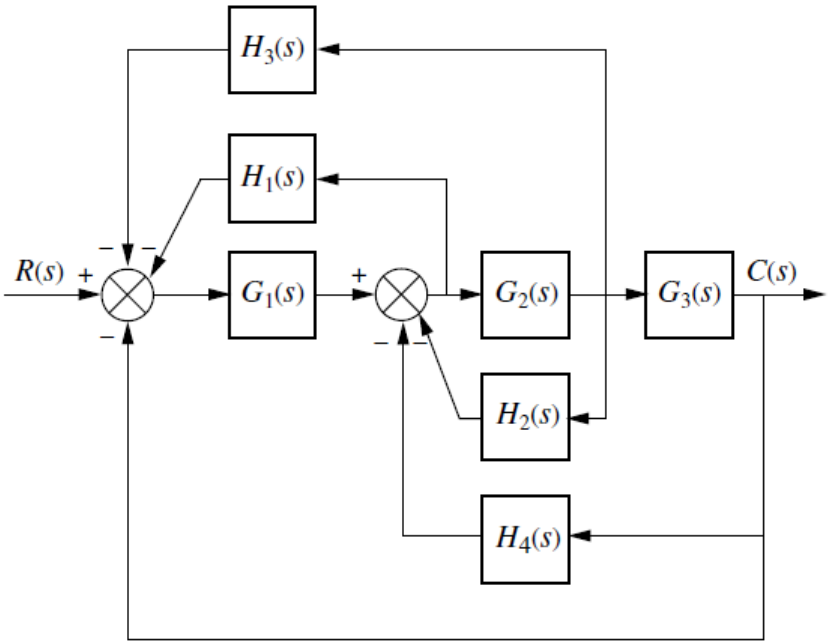
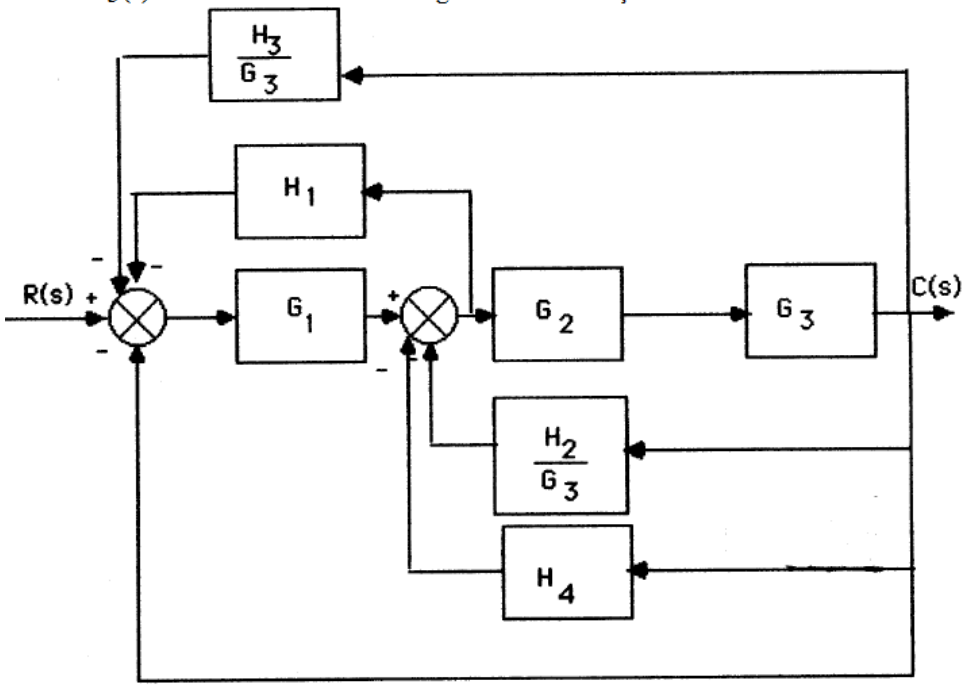
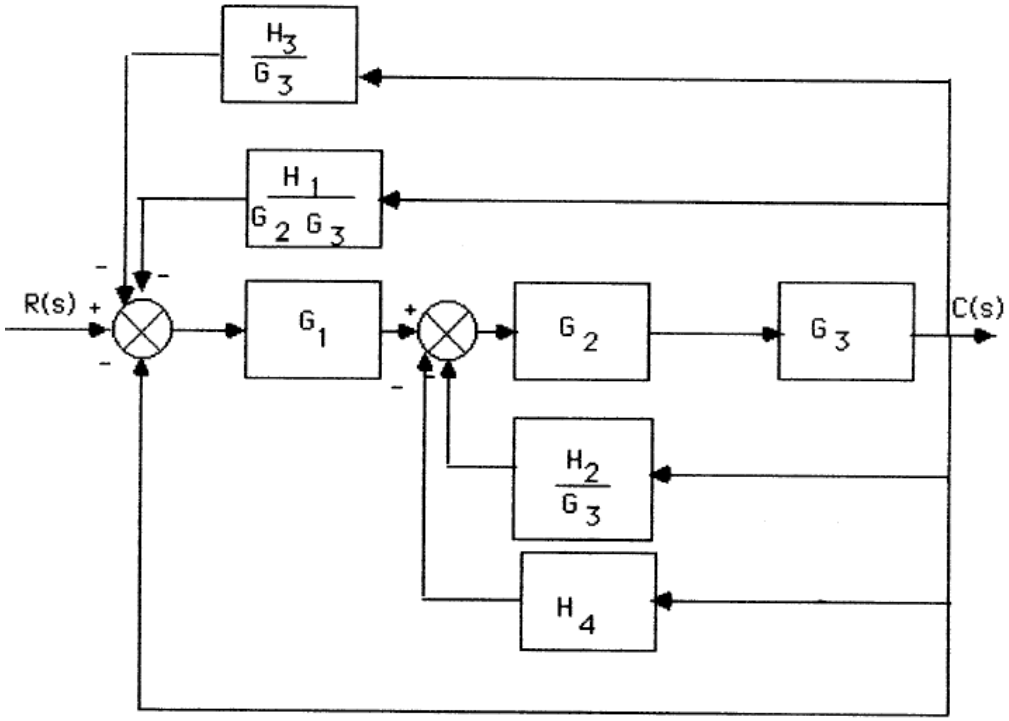


FIGURE P5.10

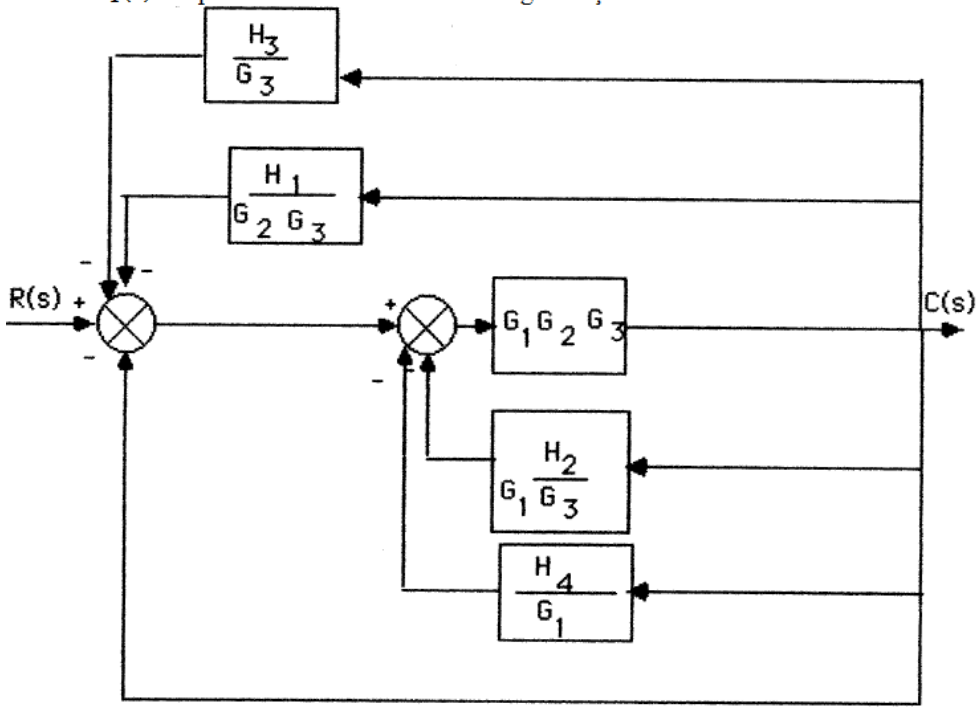
$G_3(s)$'ü dallanma noktasının sağından soluna taşırsak



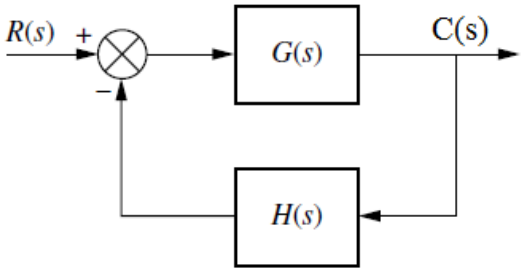
$G_2(s)\,G_3(s)$'ü dallanma noktasının sağından soluna taşırsak



$G_1(s)$'i toplama noktasının solundan sağına taşırsak :



Bu aşamada iki toplama noktası birleştirilebilir ve geri beslemeler de birleştirildiğinde sistem kolayca en sade şekilde yazılabilir:



$$T(s) = \frac{G(s)}{1 + G(s)H(s)}$$

$$G(s) = G_1(s)G_2(s)G_3(s)$$

$$H(s) = \frac{H_3(s)}{G_3(s)} + \frac{H_1(s)}{G_2(s)G_3(s)} + \frac{H_2(s)}{G_1(s)G_3(s)} + \frac{H_4(s)}{G_1(s)} + 1$$