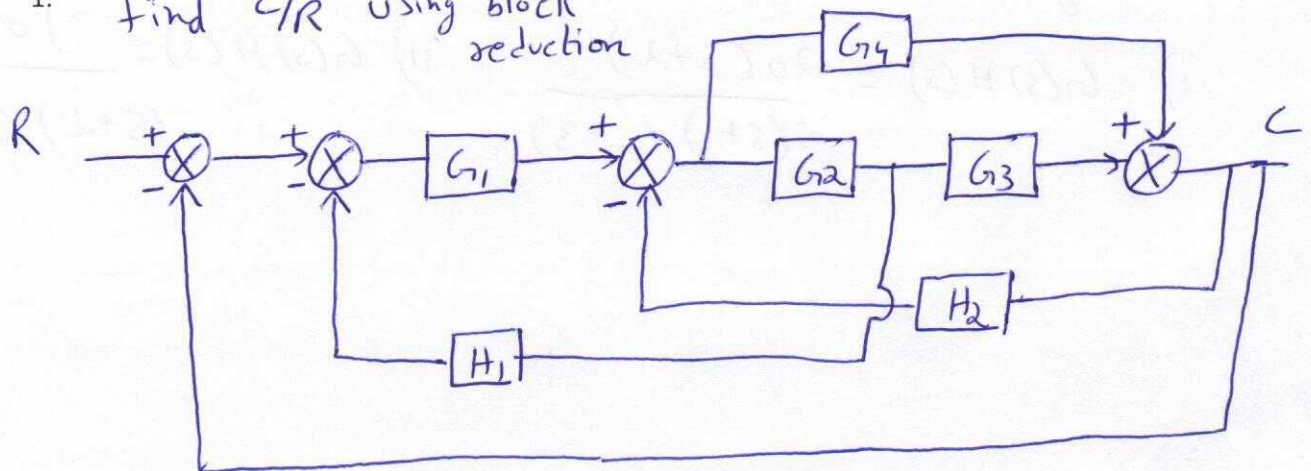
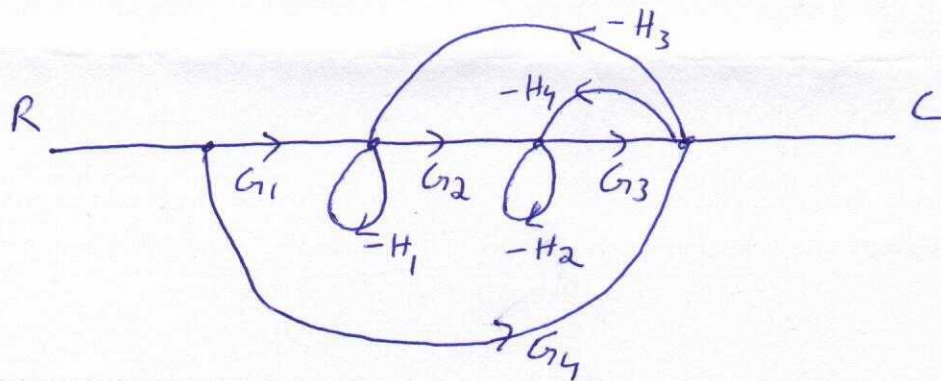


1. find  $C/R$  using block reduction



(5 marks)

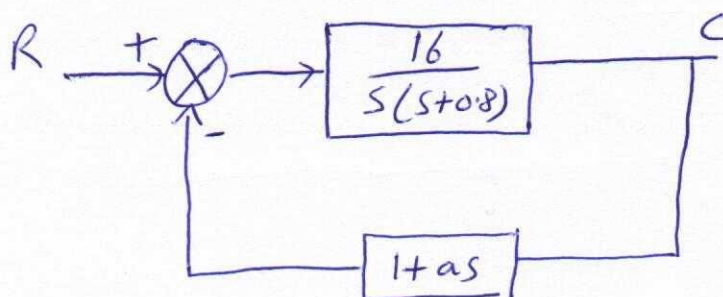
2. find  $C/R$  using Mason's gain formula (4 marks)



(4 marks)

3. for the given second order system the damping factor  $\xi = 4$ . Find

- i) a ii) Rise time iii) Peak time iv) settling time



4) For the given loop transfer functions, what type of input will give constant steady state error and calculate its value.

i)  $G(s)H(s) = \frac{20(s+2)}{s(s+1)(s+3)}$

ii)  $G(s)H(s) = \frac{10}{(s+2)(s+3)}$

