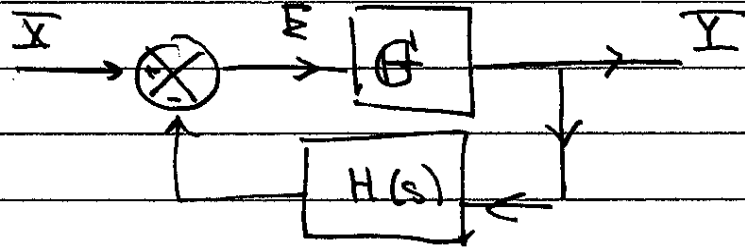


1. Consider



$$E(s) = X - Y H \quad \text{and} \quad G = \frac{s+4}{s^2(s+15)}$$

(a) Determine  $\frac{E}{X}$

(b) find  $H(s)$  such that  $e(\infty) = \frac{1}{10}$   
given that  $x(t) = (3+t)u(t)$

7. Given the unit impulse response

$$h(t) = 5e^{-t} \cos(2t) u(t)$$

- (a) Determine  $\omega_d$  and  $\zeta$  from  $h(t)$   
assuming 2<sup>nd</sup> order model
- (b) Find  $H(s)$  are your est. correct?
- (c) Determine the step response of  
the system