

SEOUL NATIONAL UNIVERSITY
SCHOOL OF MECHANICAL AND AEROSPACE ENGINEERING

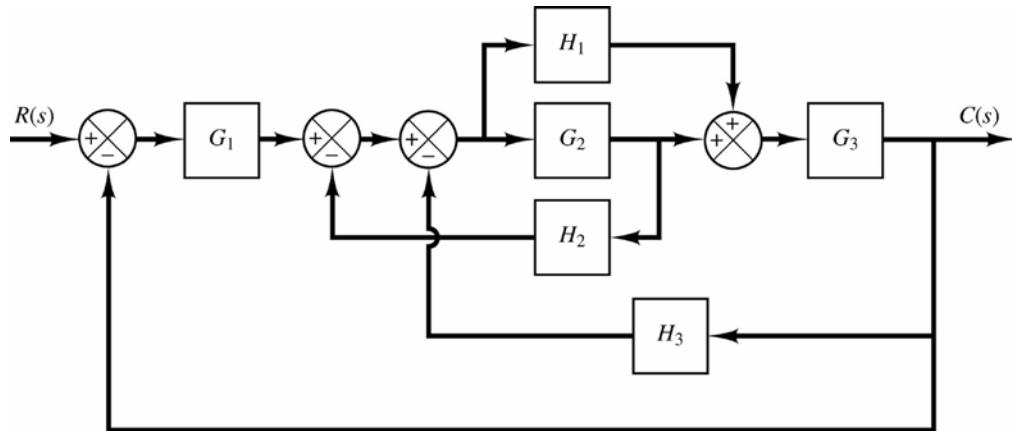
SYSTEM CONTROL

Fall 2014

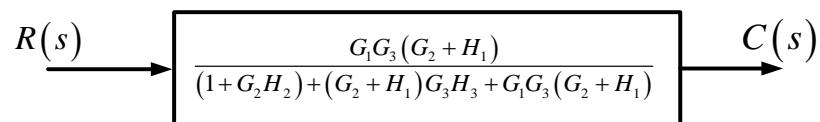
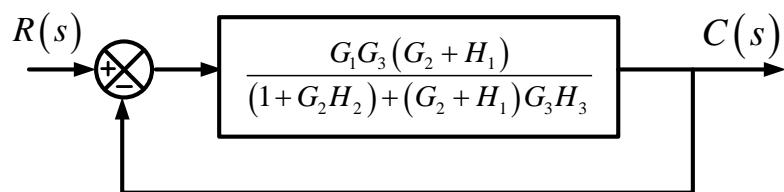
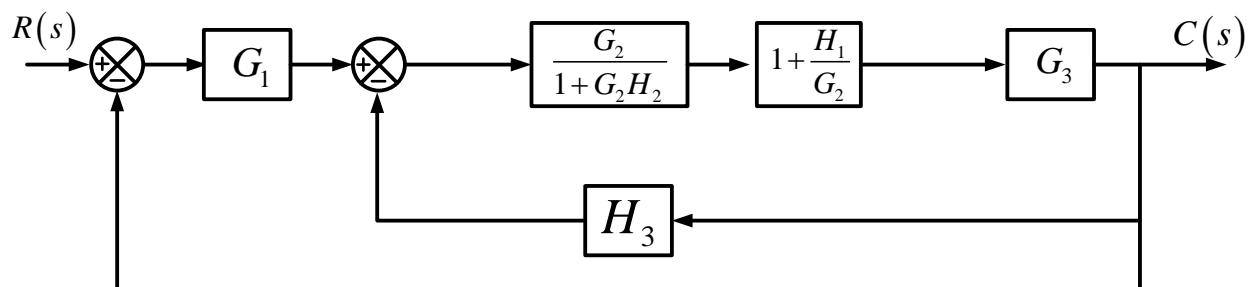
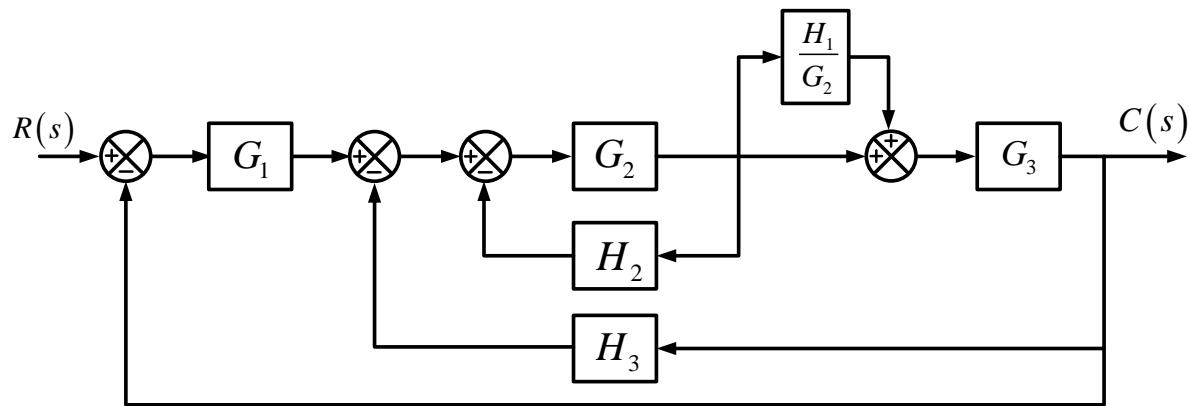
Quiz#2 Mathematical modeling of control systems
September 30, 2014 (Mo)

Student ID# _____ Name _____

[1] Simplify the block diagram shown in the Figure below and obtain the closed-loop transfer function $C(s)/R(s)$.



Solution



$$\therefore \frac{C(s)}{R(s)} = \frac{G_1 G_3 (G_2 + H_1)}{1 + G_2 H_2 + G_2 G_3 H_3 + G_3 H_1 H_3 + G_1 G_2 G_3 + G_1 G_3 H_1}$$