Department of Electrical and Electronics Engineering
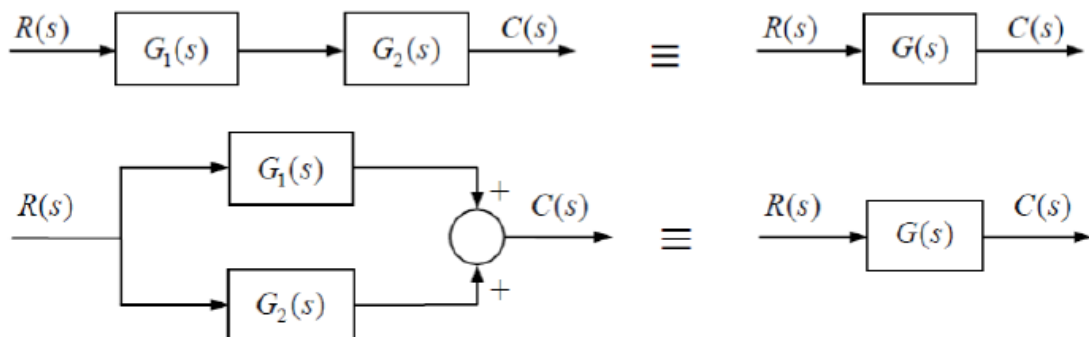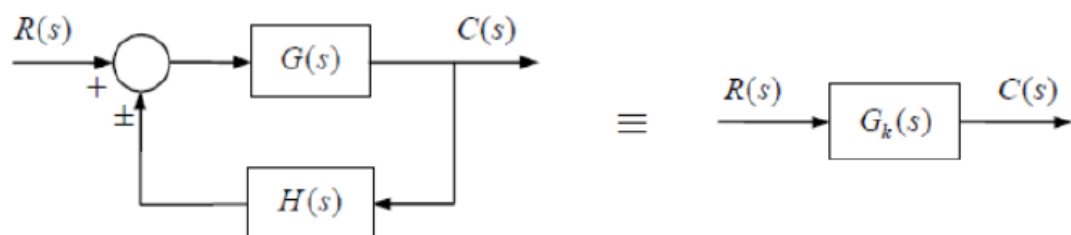
CONTROL LAB 2

PRELAB: You should do all calculations on paper!!!

1) **Find** $G_1(s)$ **and** $G_2(s)$ **equal** $\dfrac{10}{s^2+2s+10}$, $\dfrac{5}{s+5}$ **respectively, reduce the blocks connected in series and parallel.**

2) **If** $G(s)$ **and** $H(s)$ **equal** $\dfrac{10}{s^2+2s+10}$, $\dfrac{5}{s+5}$ **respectively, reduce the blocks connected with feedback connection.**

3) Find the closed loop transfer function of the system given below with MATLAB functions.

$$
\begin{array}{c}
G_{k1} \qquad\qquad\qquad G_1 \\[2mm]
R(s) \xrightarrow{} \bigoplus^{+}_{-} \xrightarrow{} \boxed{4} \; \bigoplus^{+}_{-} \xrightarrow{} \boxed{\dfrac{2}{(s+1)(s+8)}} \xrightarrow{} \boxed{\dfrac{1}{s}} \xrightarrow{} C(s)
\end{array}
$$

G_2

$$\boxed{0.2}$$

H

G_3