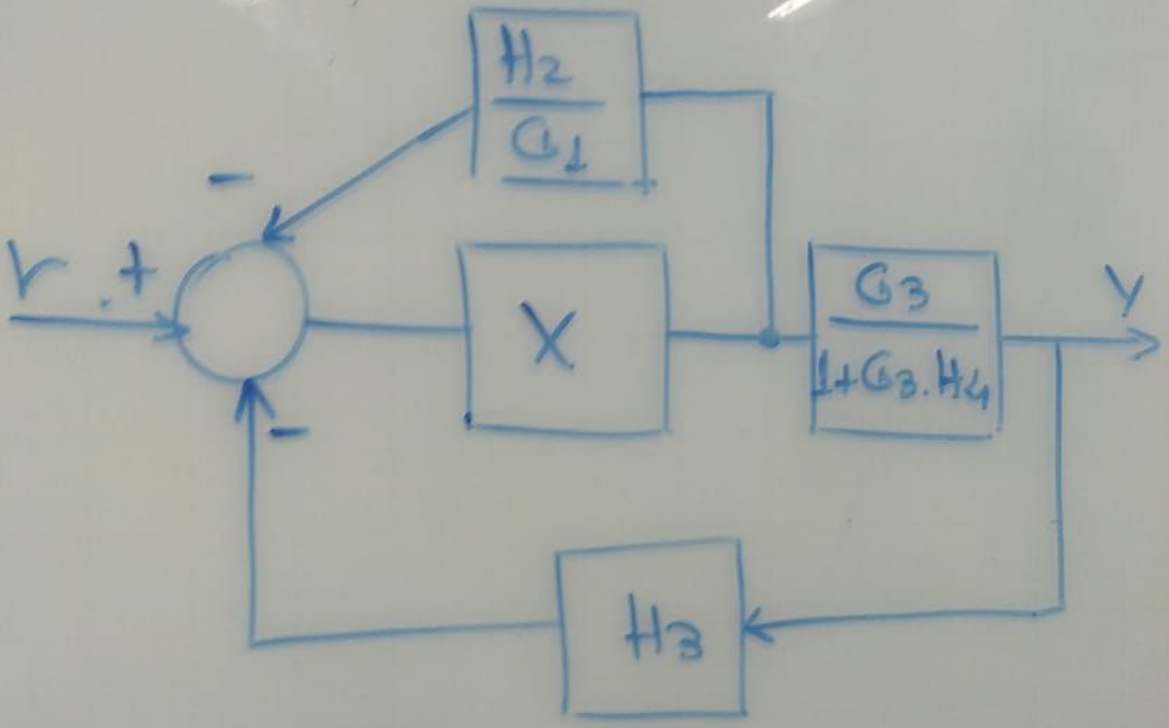
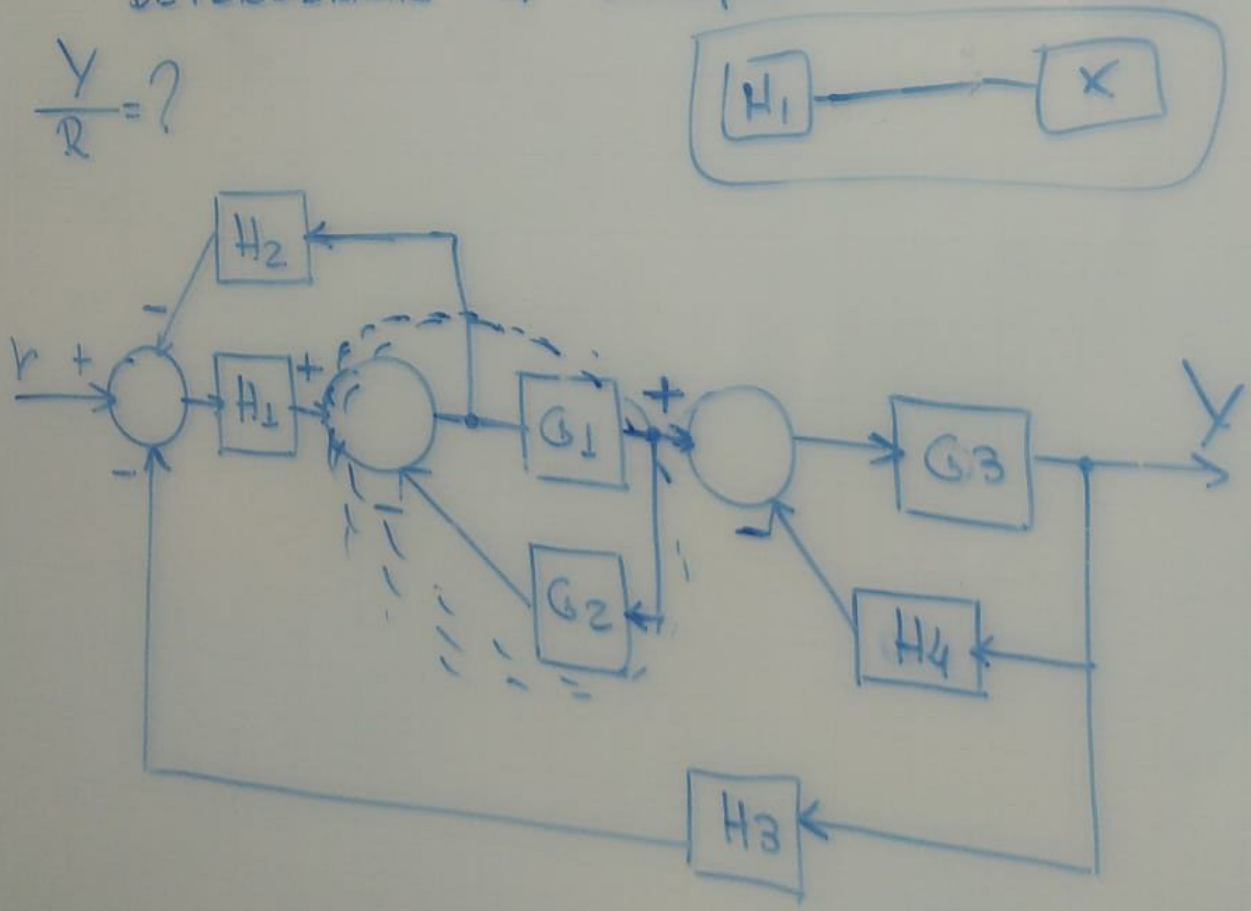
$$X = H_1 \cdot \left(\frac{G_1}{1 + G_1 \cdot G_2} \right)$$



→ REDUÇÃO DE DIAGRAMA DE BLOCOS:

DETERMINAR A FUNÇÃO DE TRANSFERÊNCIA

$\frac{Y}{R} = ?$



$$Y = G \cdot r$$

$$P = H \cdot Y$$

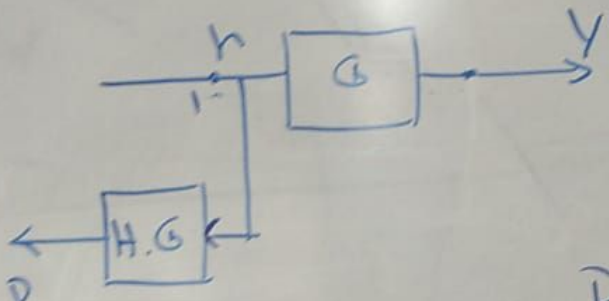
$$P = H \cdot G \cdot r$$

$$\frac{P}{r} = H \cdot G$$

$$\begin{cases} Y = G \cdot r \Rightarrow r = \frac{Y}{G} \\ P = H \cdot r \end{cases}$$

$$P = H \cdot \frac{Y}{G}$$

$$\boxed{\frac{P}{Y} = \frac{H}{G}}$$



$Y = G.r$

$P = H.Y$

$P = H.G.r$

$\frac{P}{r} = H.G$

$$Y = G.(r - HY)$$

$$Y = Gr - GHY$$

$$Y + GHY = G.r$$

$$Y(1 + GH) = G.r$$

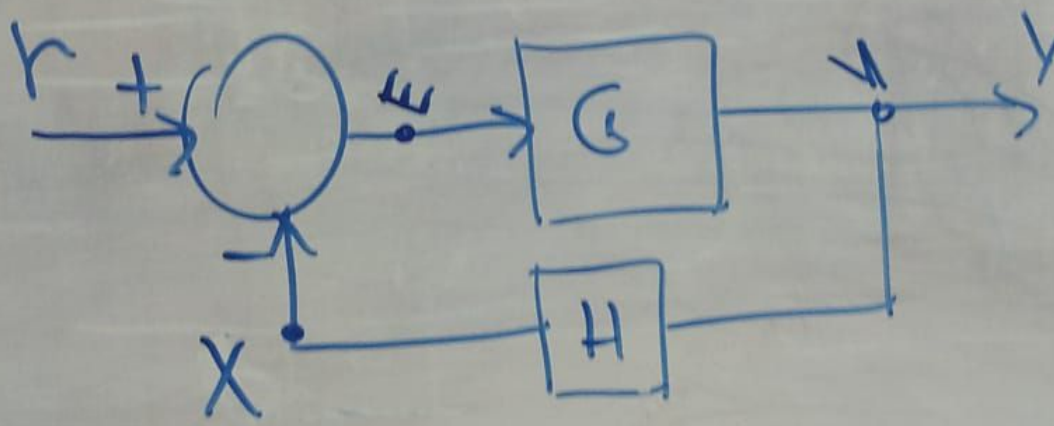
$$\frac{Y}{r} = \frac{G}{1 + G.H}$$

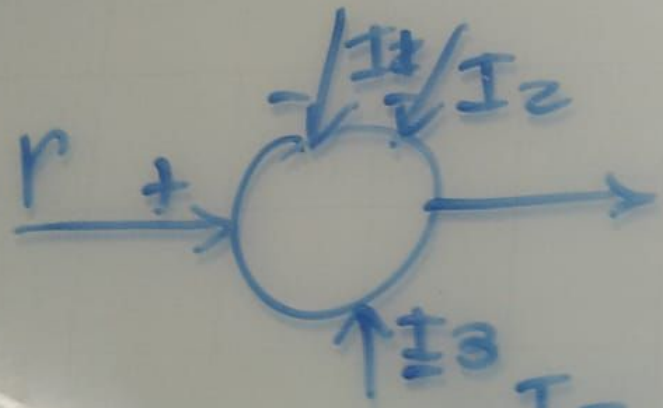
$$X = \frac{G_2}{1 + G_2.(H_2 + H_4.G_3)}$$

$$X = H.Y$$

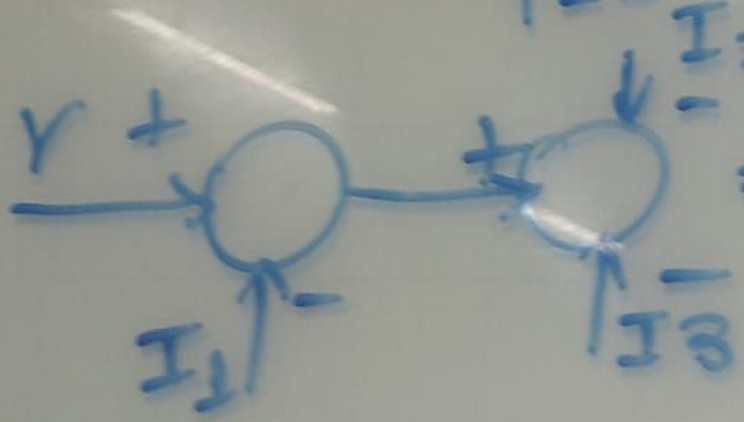
$$E = r - X$$

$$Y = G.E$$





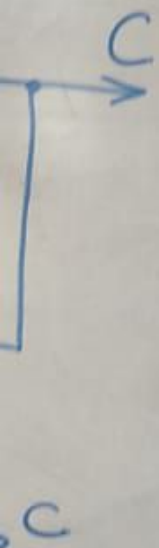
$r - I_1 - I_2 - I_3$

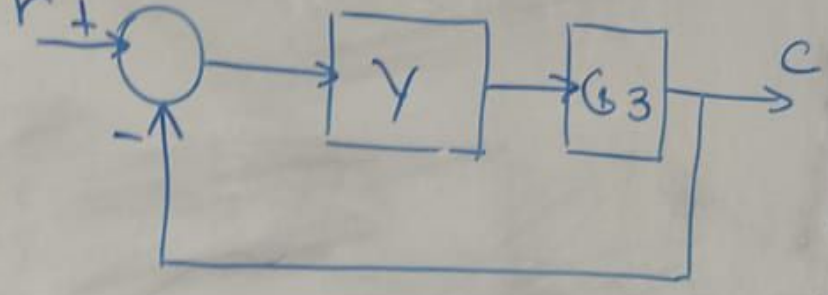


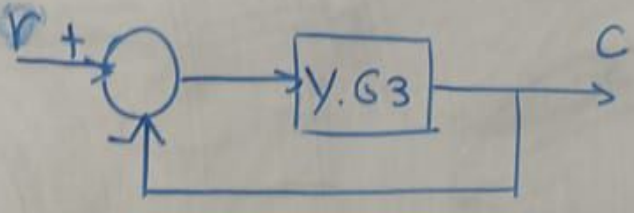
$\Rightarrow +(r - I_1) - I_2 - I_3$

$r - I_1 - I_2 - I_3$

IA





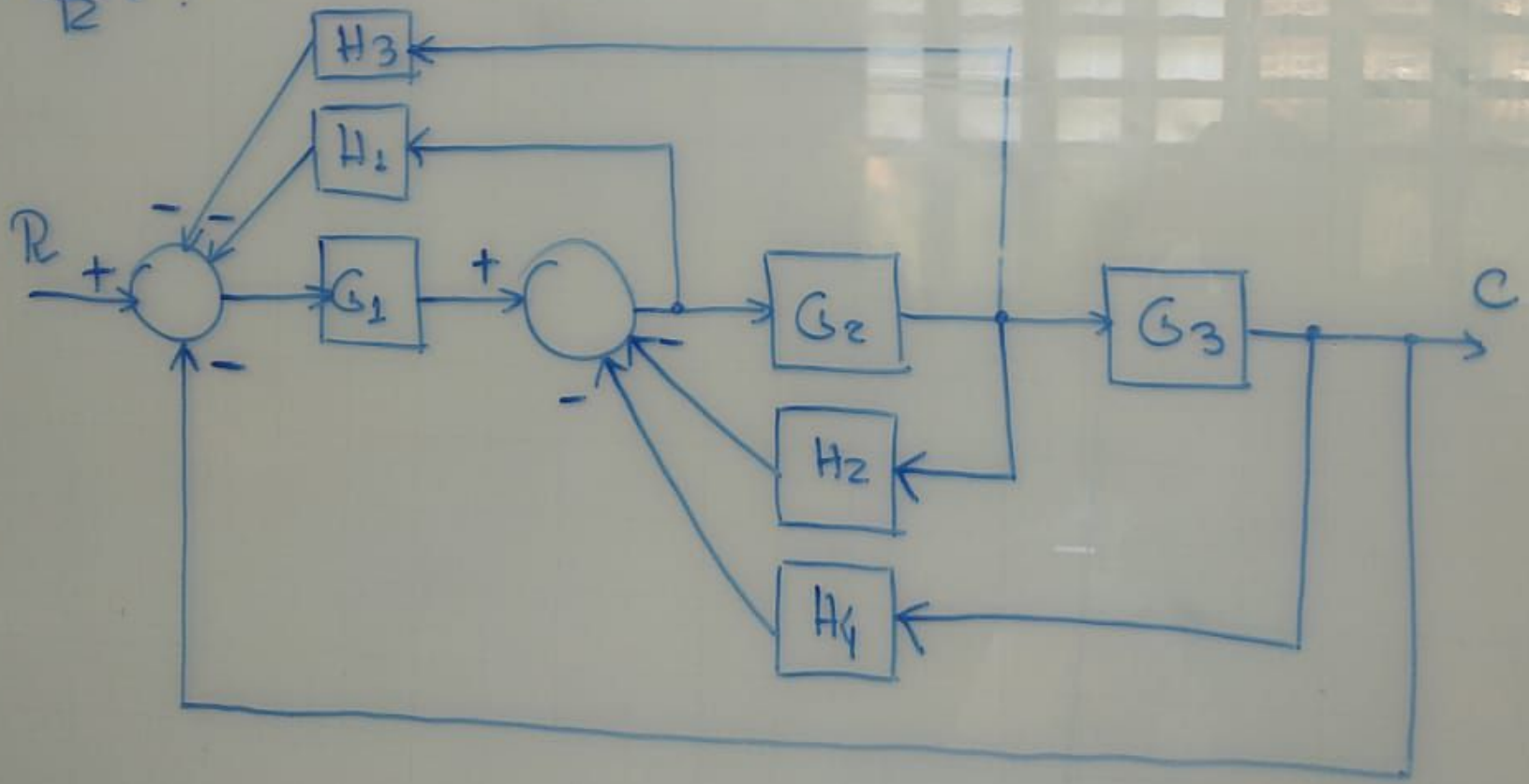


$$\frac{C}{r} = \frac{Y.G_3}{1 + Y.G_3}$$

→ REDUÇÃO DE DIAGRAMA DE BLOCOS

DETERMINAR A FUNÇÃO DE TRANSFERÊNCIA

$\frac{C}{R} = ?$



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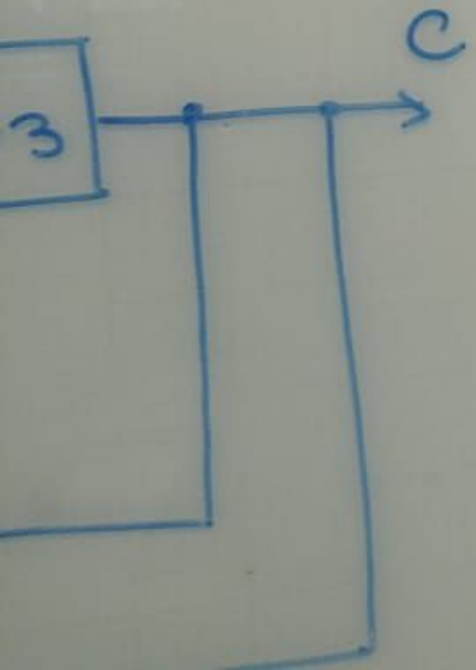
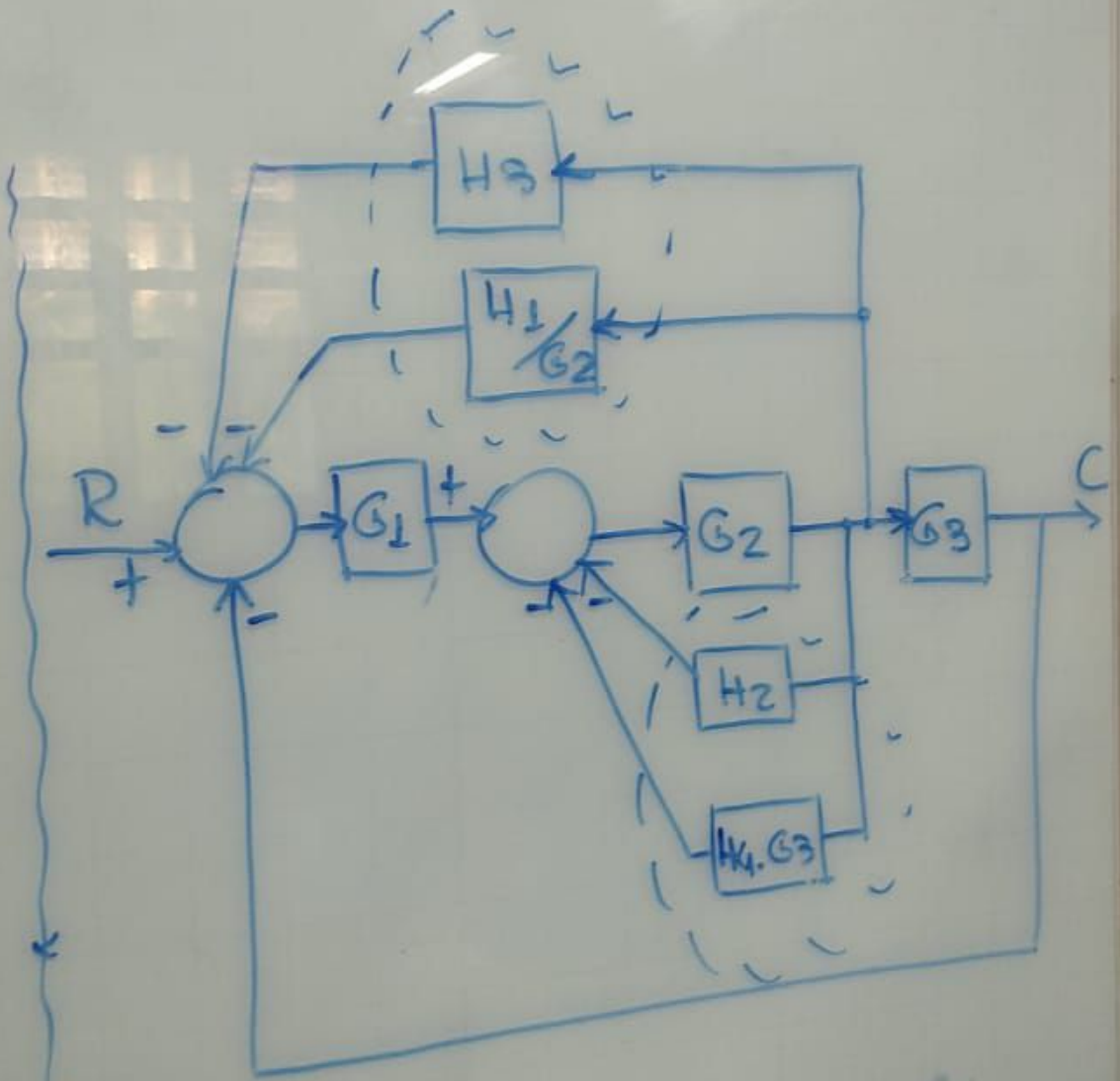
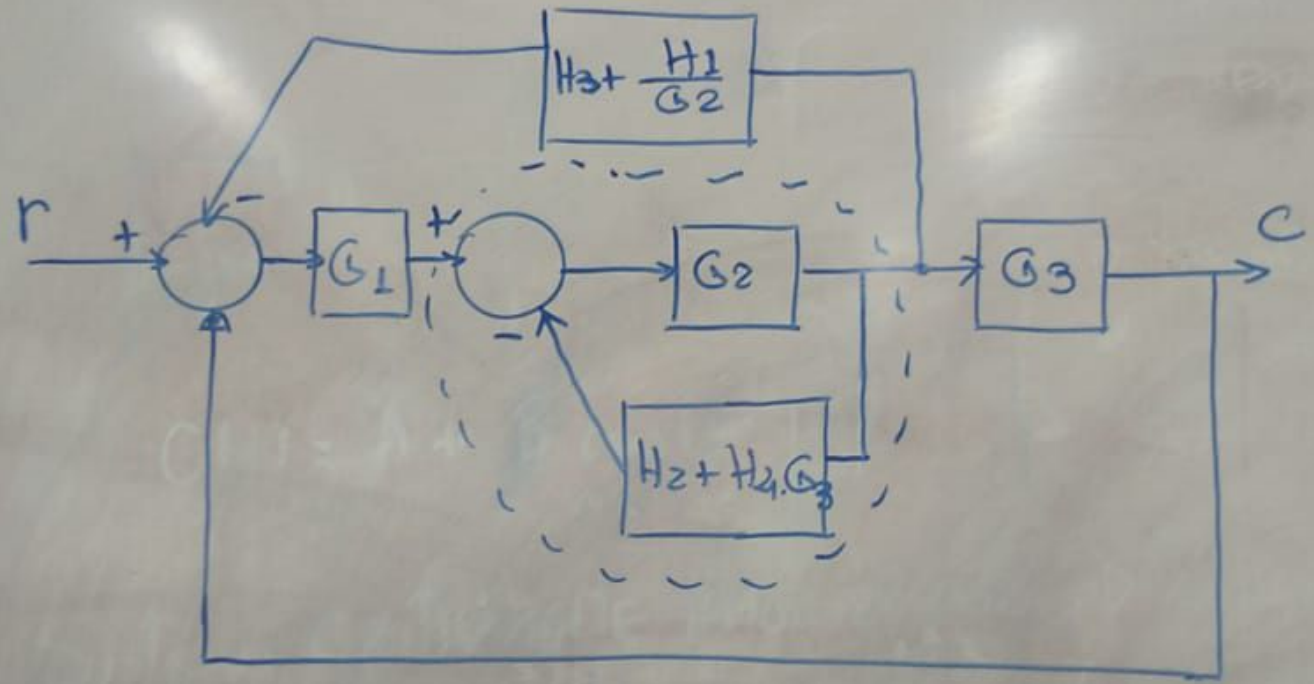
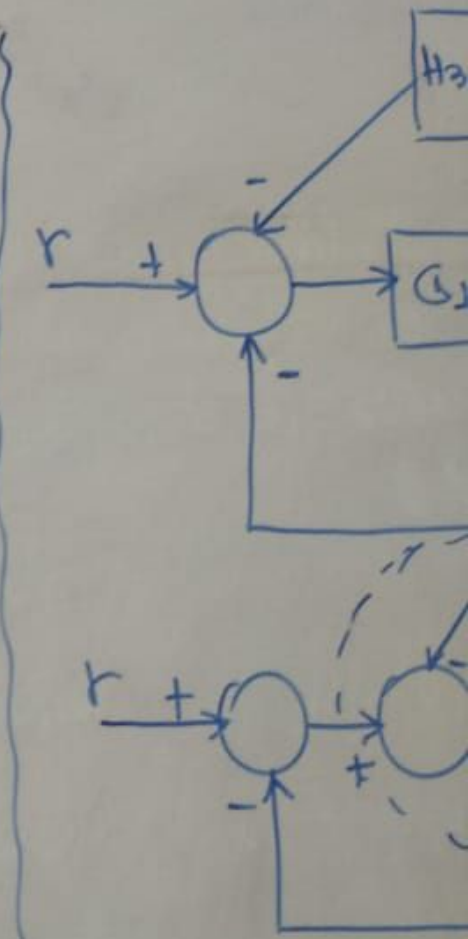


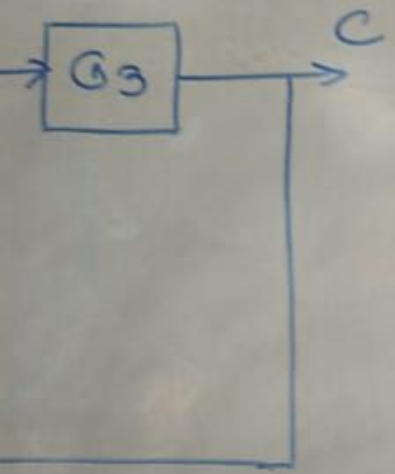


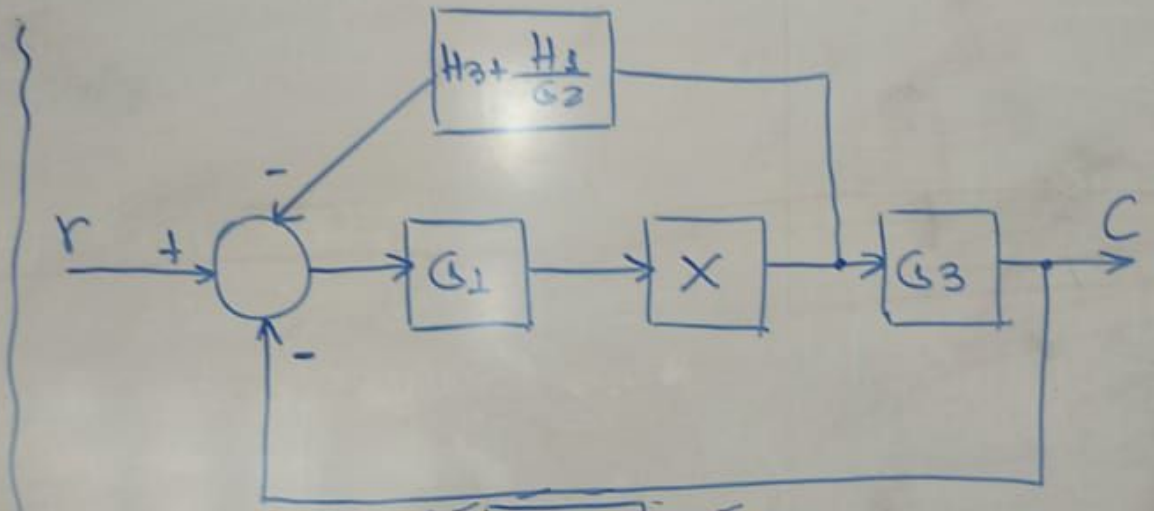


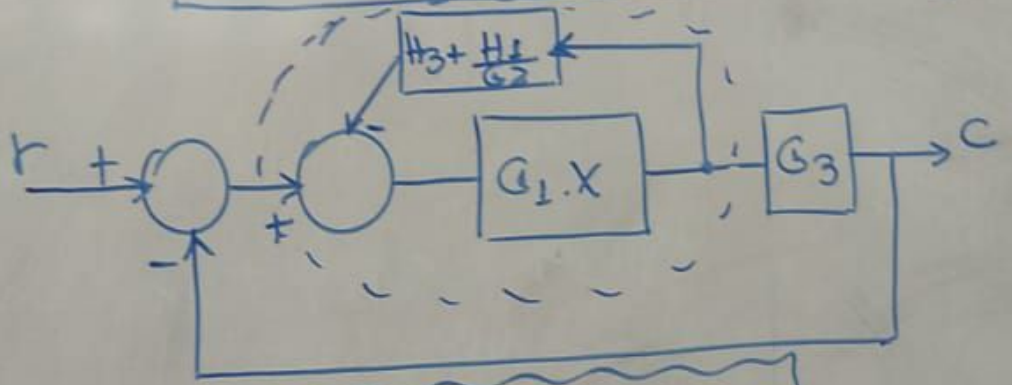
$$X = \frac{G_2}{1 + G_2.(H_2 + H_4.G_3)}$$



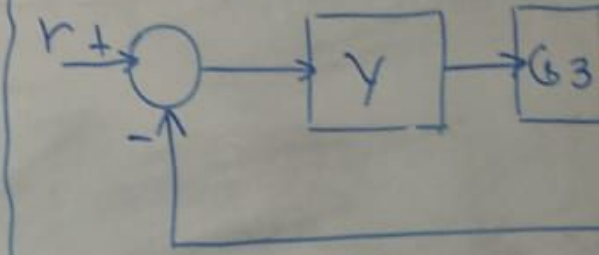
Y =

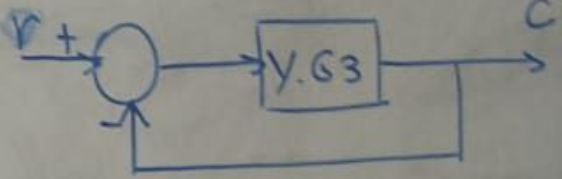




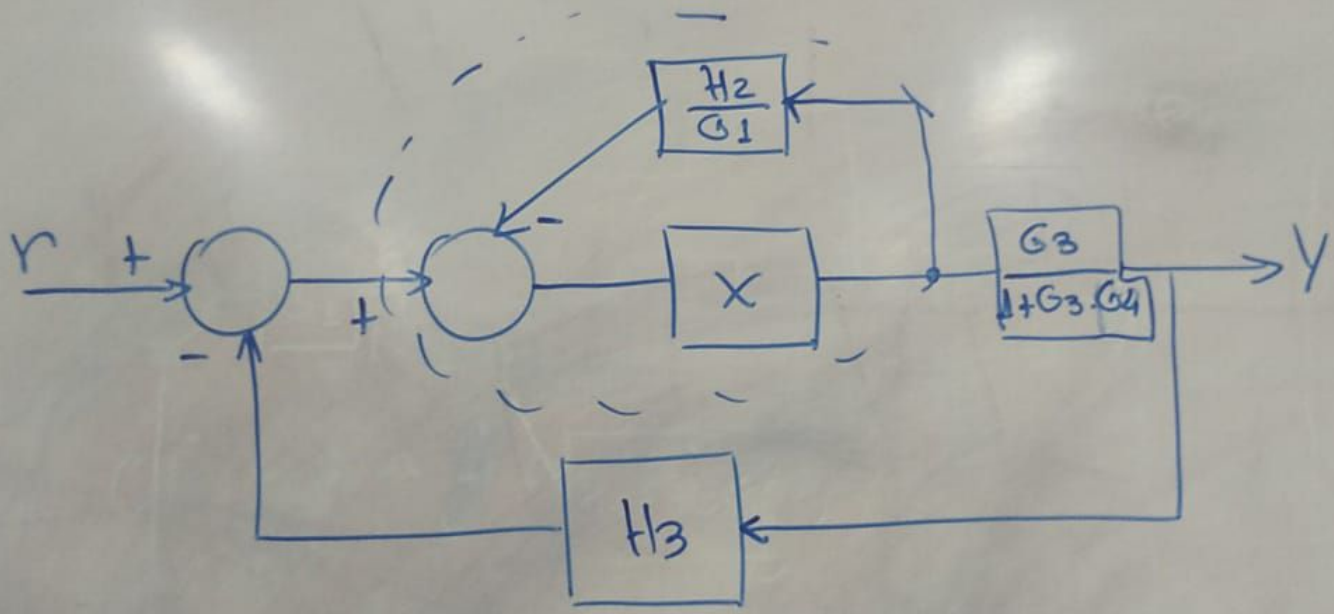


$$Y = \frac{G_1 . X}{1 + G_1 . X \left(H_3 + \frac{H_1}{G_2} \right)}$$





$$\frac{C}{r} = \frac{Y . G_3}{1 + Y . G_3}$$


r
+
+
-
-
$\frac{H_2}{G_1}$
X
$\frac{G_3}{1+G_3 G_4}$
Y
H_3