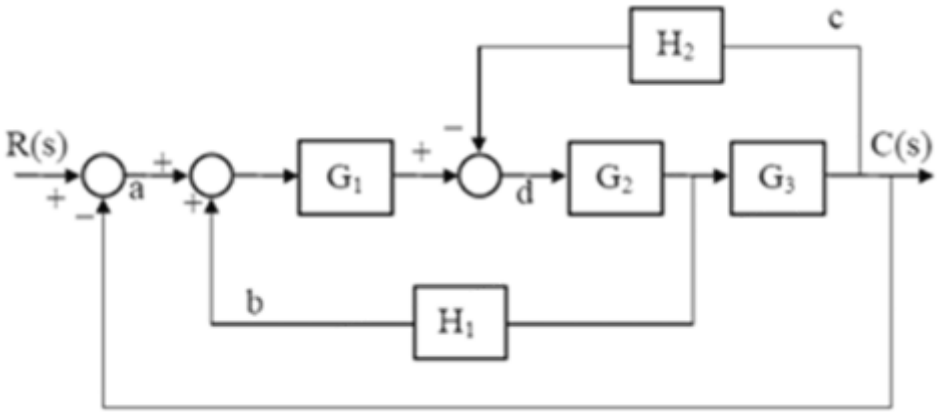
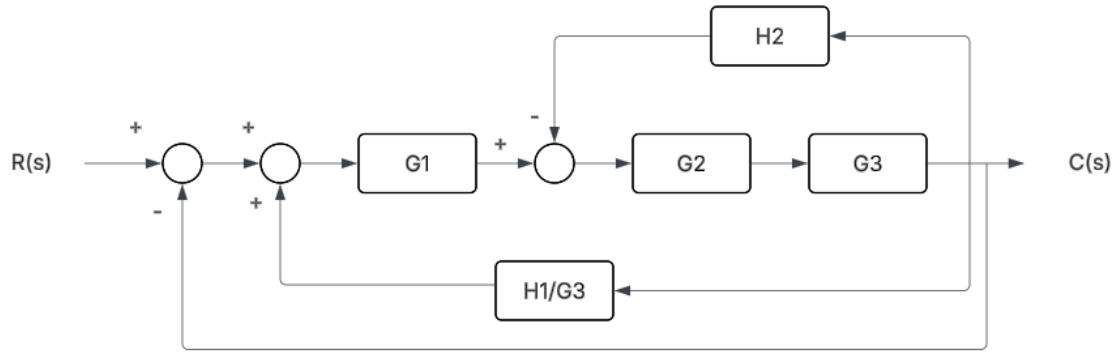
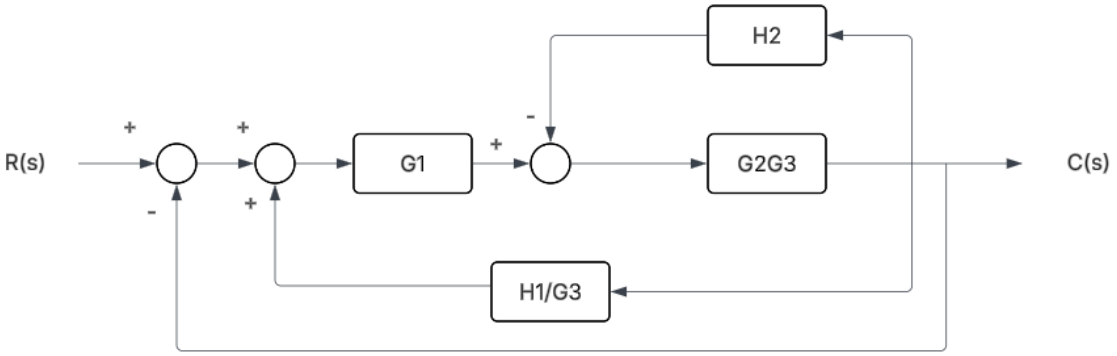
Obtenga la función de transferencia global del sistema mediante movimiento de bloques.



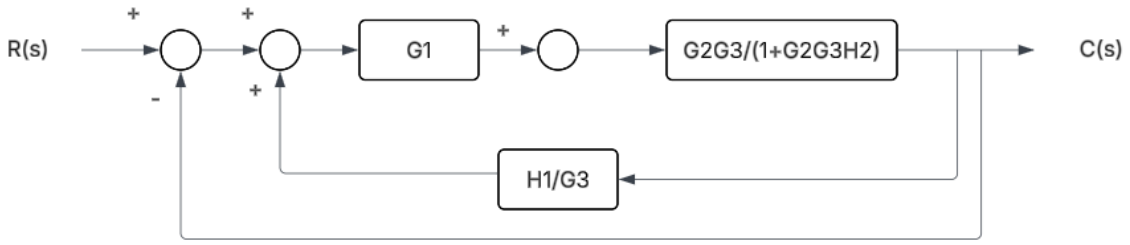
1. Movemos el punto de ramificación de H_1 hasta después del bloque G_3



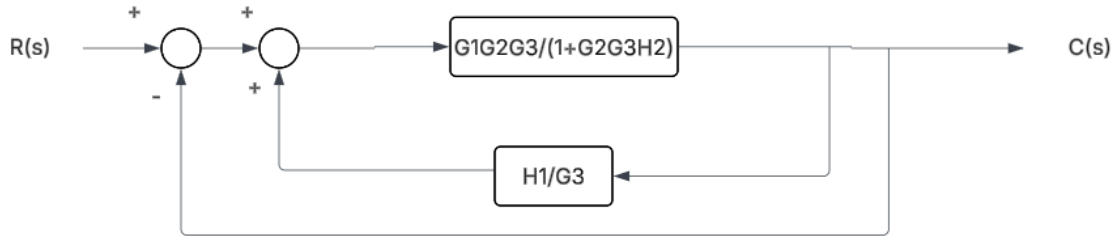
2. Reducimos los bloques G_2 y G_3



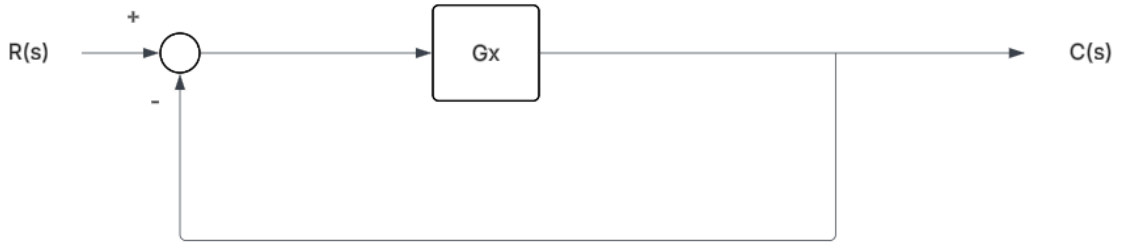
3. Reducimos el bucle de H_2



4. Simplificamos los bloques en serie.



5. Reducimos el bucle inferior.



$$G_X = \frac{\frac{G_1G_2G_3}{1+G_2G_3H_2}}{\left(1-\frac{G_1G_2G_3}{1+G_2G_3H_2}\right)\left(\frac{H_1}{G_3}\right)} = \frac{G_1G_2G_3}{1+G_2G3H_2-G_1G_2H_1}$$

6. Reducimos la realimentación negativa final.

$$G_Y = \frac{\frac{G_1G_2G_3}{1+G_2G_3H_2-G_1G_2H_1}}{1+\frac{G_1G_2G_3}{1+G_2G_3H_2-G_1G_2H_1}} = \frac{G_1G_2G_3}{1+G_2G_3H_2-G_1G_2H_1+G_1G_2G_3}$$

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