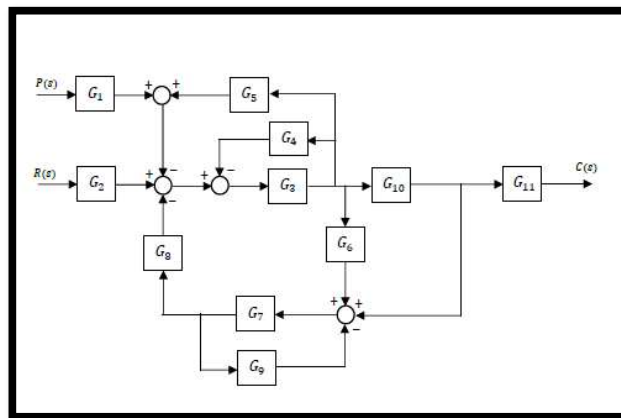# Institución Universitaria Antonio José Camacho
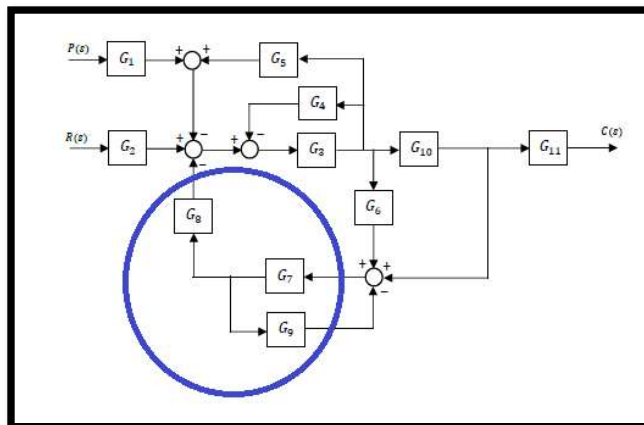
SISTEMAS DINÁMICOS

TALLER 1 – DIAGRAMAS DE BLOQUES.

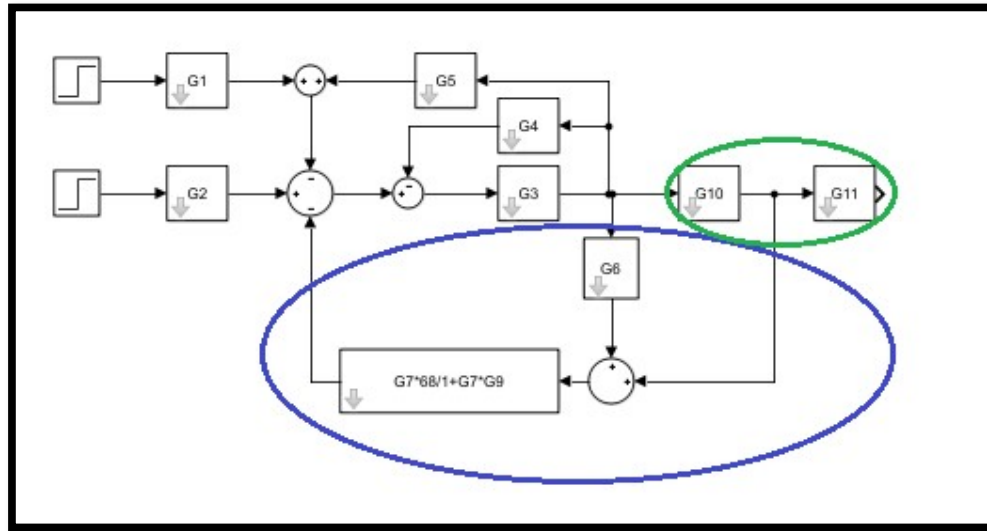**Integrantes:** Maydee Pérez, Cristian Daza, Edward Benachi, Oscar Arcos, Cristhian Torres.

Solución.
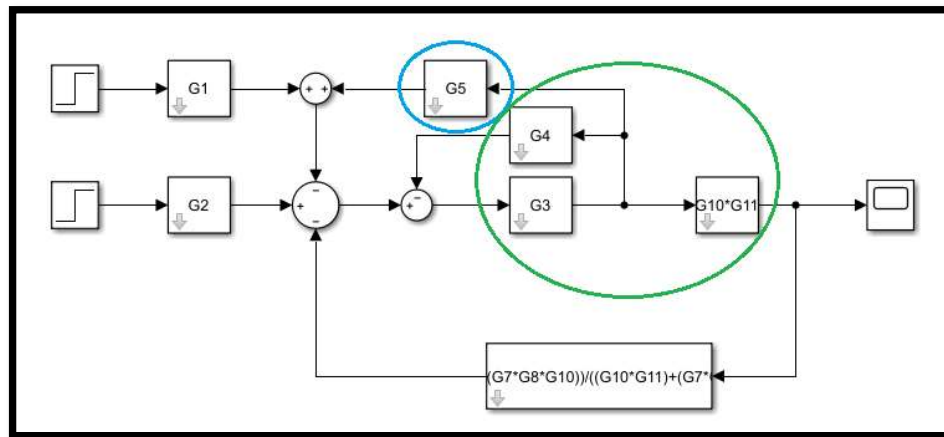
1.

$$G8G7 * \frac{1}{1+G7G9} = \frac{G7G8}{1+G7G9}$$

2.

$$\left(\frac{1}{G11}+\frac{G6}{G11G10}\right)*\frac{G7G8}{1+G7G9}=\frac{G10+G6}{G10G11}*\frac{G7G8}{1+G7G9}=\frac{G6G7G8+G7G8G10}{G10G11+G7G9G10G11}$$

$$G10*G11$$

3.

$$G5*\frac{1}{G10G11}=\frac{G5}{G10G11}$$

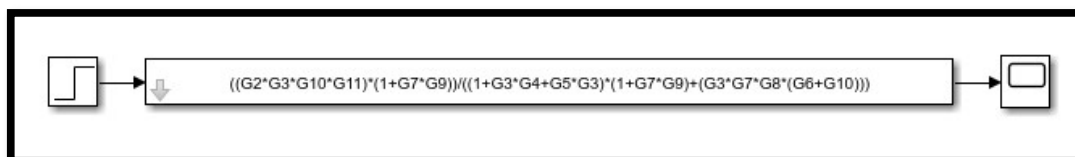$$\frac{G3}{1+G3G4}*G10G11=\frac{G3G10G11}{1+G3G4}$$
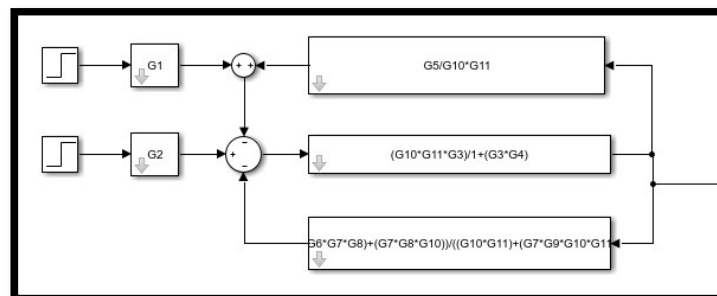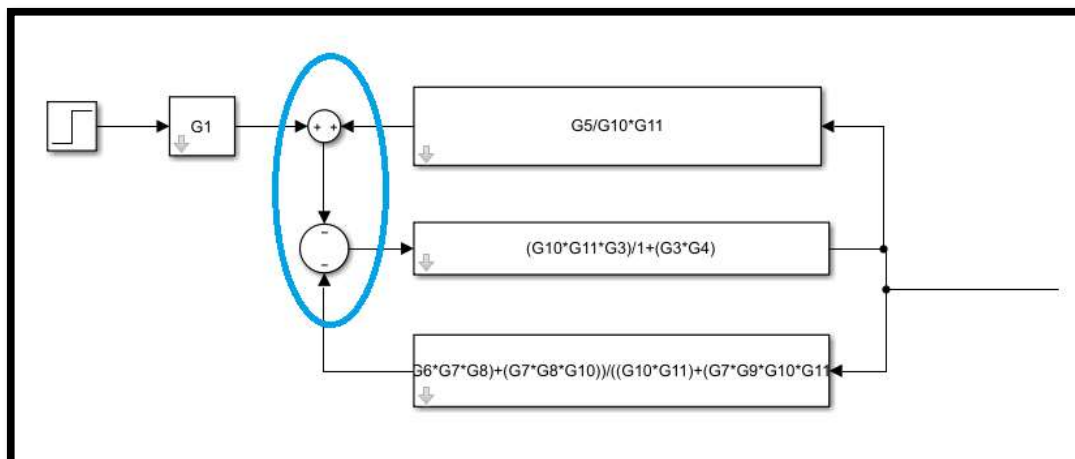
4. Superposición P(s)=0
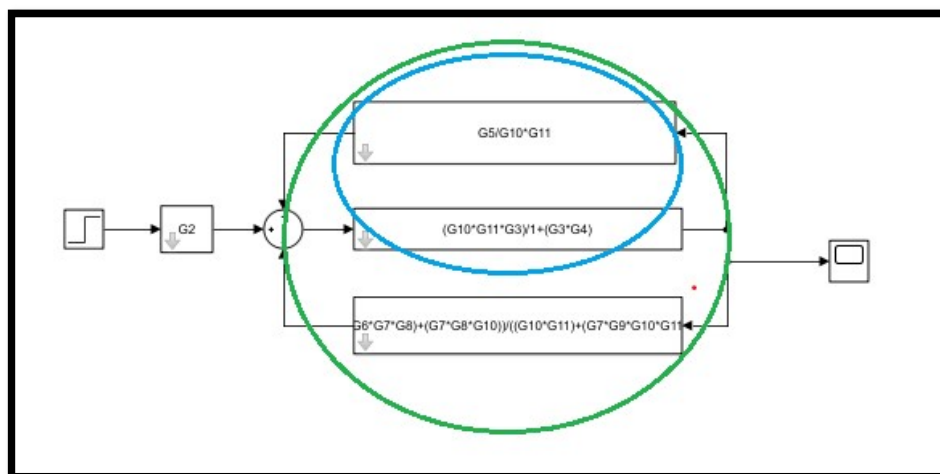
$$\frac{\dfrac{G3G10G11}{1+G3G4}}{1+\dfrac{G3G10G11}{1+G3G4}*\dfrac{G5}{G10G11}} = \frac{G3G10G11}{1+G3G4+G5G3}$$
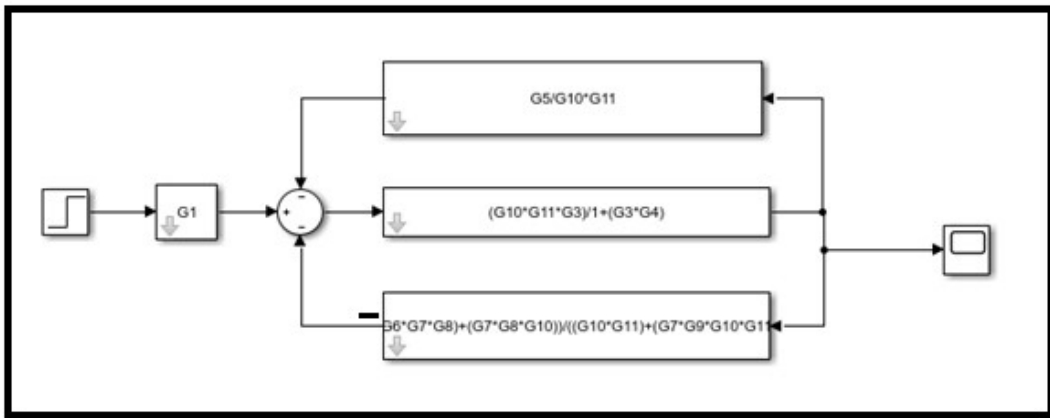
$$\frac{\dfrac{G3G10G11}{1+G3G4+G5G3}}{1+\dfrac{G3G10G11}{1+G3G4+G5G3}*\dfrac{G6G7G8+G7G8G10}{G10G11+G7G9G10G11}} = \frac{G3G10G11(1+G7G9)}{(1+G3G4+G5G3)(1+G7*G9)+G3G7G8(G6+G10)}$$

$$G2\frac{G3G10G11(1+G7G9)}{(1+G3G4+G5G3)(1+G7*G9)+G3G7G8(G6+G10)} = \frac{G2G3G10G11(1+G7G9)}{(1+G3G4+G5G3)(1+G7*G9)+G3G7G8(G6+G10)}$$

5. Superposición R(s)=0

$$G1 \frac{G3G10G11(1+G7G9)}{(1+G3G4+G5G3)(1+G7*G9)+G3G7G8(G6+G10)} = \frac{-G1G3G10G11(1+G7G9)}{(1+G3G4+G5G3)(1+G7*G9)+G3G7G8(G6+G10)}$$

-((G1*G3*G10*G11)*(1+G7*G9))/((1+G3*G4+G5*G3)*(1+G7*G9)+(G3*G7*G8*(G6+G10)))

SOLUCIÓN

P(s) — -((G1*G3*G10*G11)*(1+G7*G9))/((1+G3*G4+G5*G3)*(1+G7*G9)+(G3*G7*G8*(G6+G10)))

R(s) — ((G2*G3*G10*G11)*(1+G7*G9))/((1+G3*G4+G5*G3)*(1+G7*G9)+(G3*G7*G8*(G6+G10)))