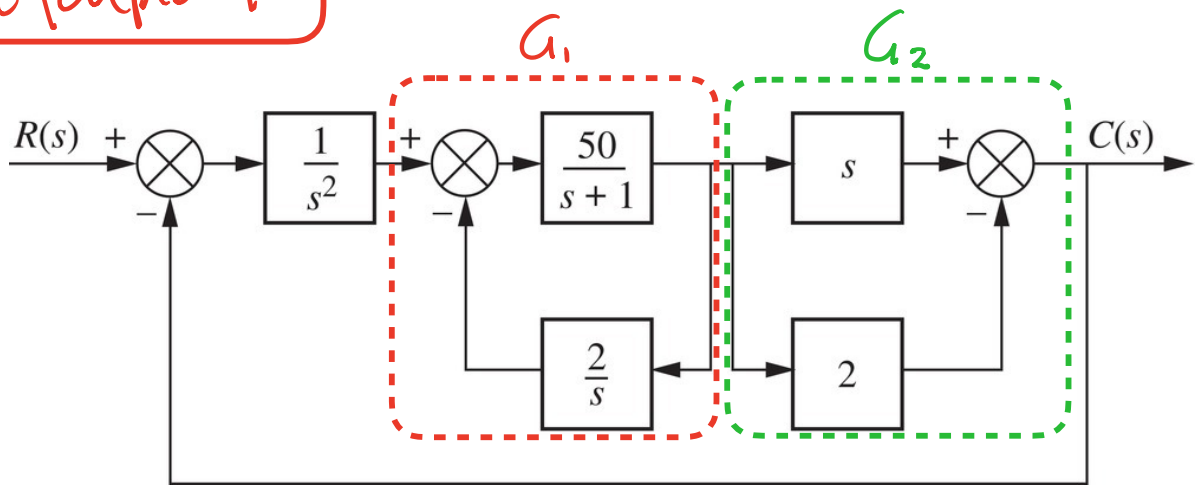
Ejemplo 1



$$G_1(s) = \frac{\frac{50}{s+1}}{1+\left(\frac{2}{s}\right)\left(\frac{50}{s+1}\right)} = \frac{50s}{s^2+s+100}$$

$$G_2(s) = s-2$$

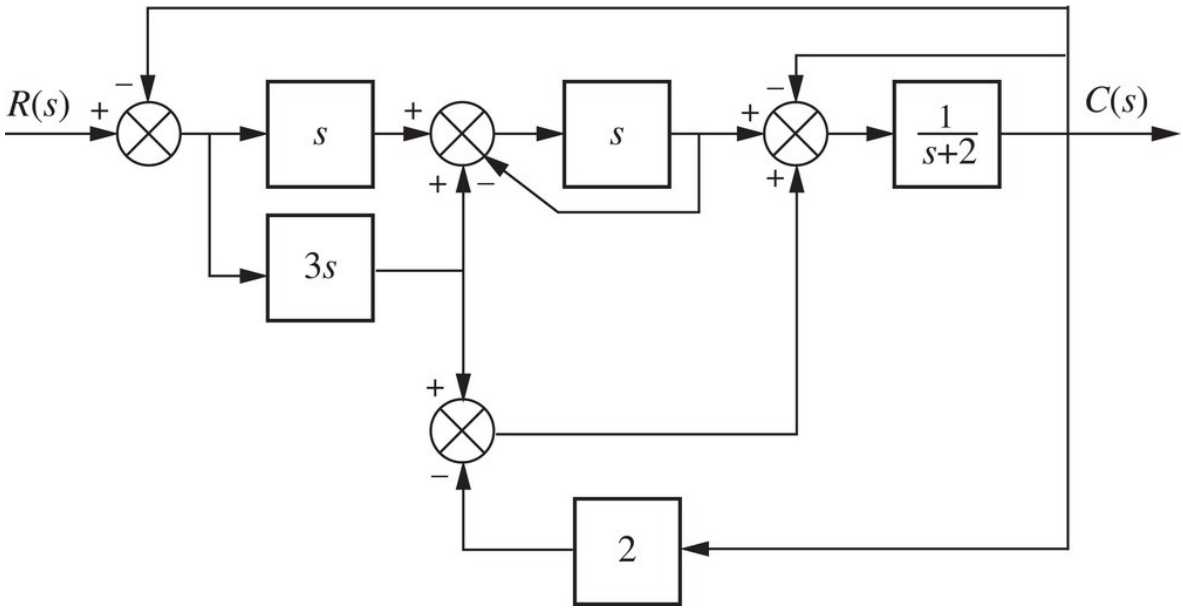
$$G_{OL}(s) = \left(\frac{1}{s^2}\right)\left(\frac{50s}{s^2+s+100}\right)(s-2)$$

$$G_{OL}(s) = \frac{50s-100}{s(s^2+s+100)}$$

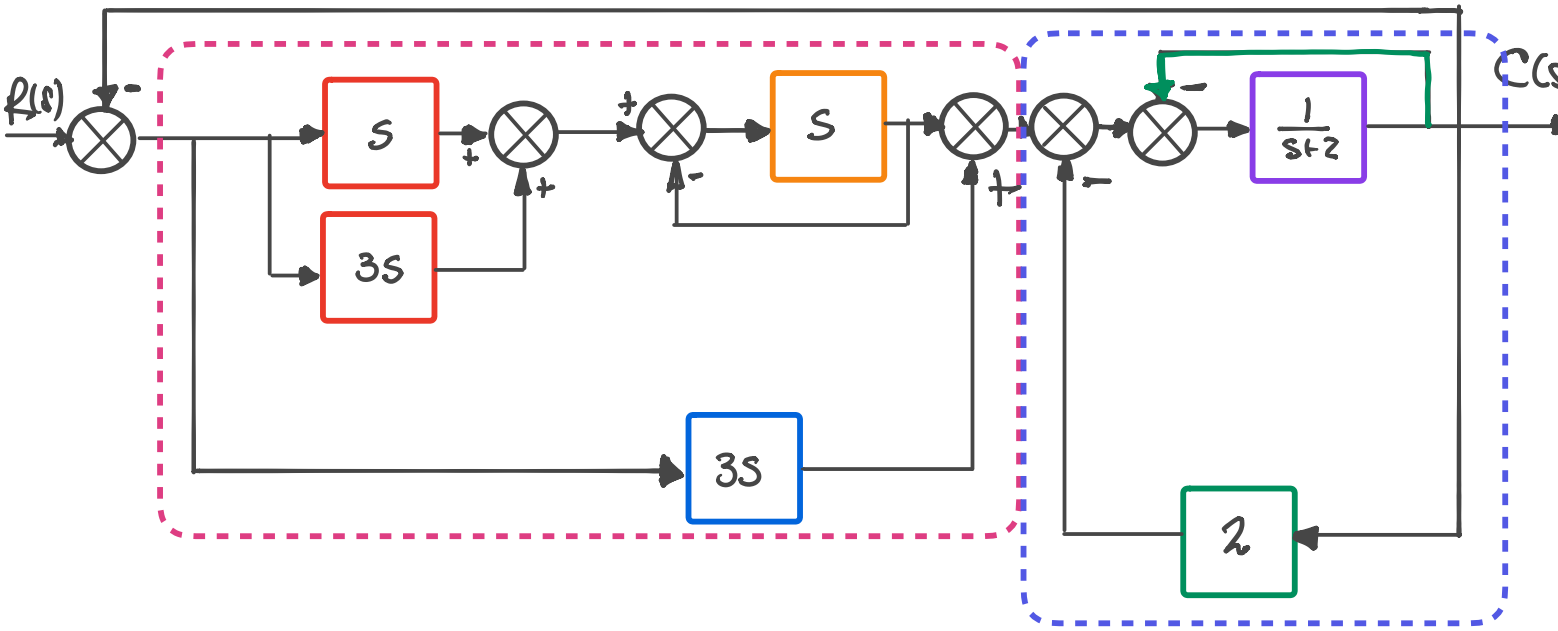
$$T(s) = \frac{\frac{50s-100}{s^3+s^2+100s}}{1+\frac{50s-100}{s^3+s^2+100s}}$$

$$T(s) = \frac{50s-100}{s^3+s^2+150s-100}$$

Ejemplo 2

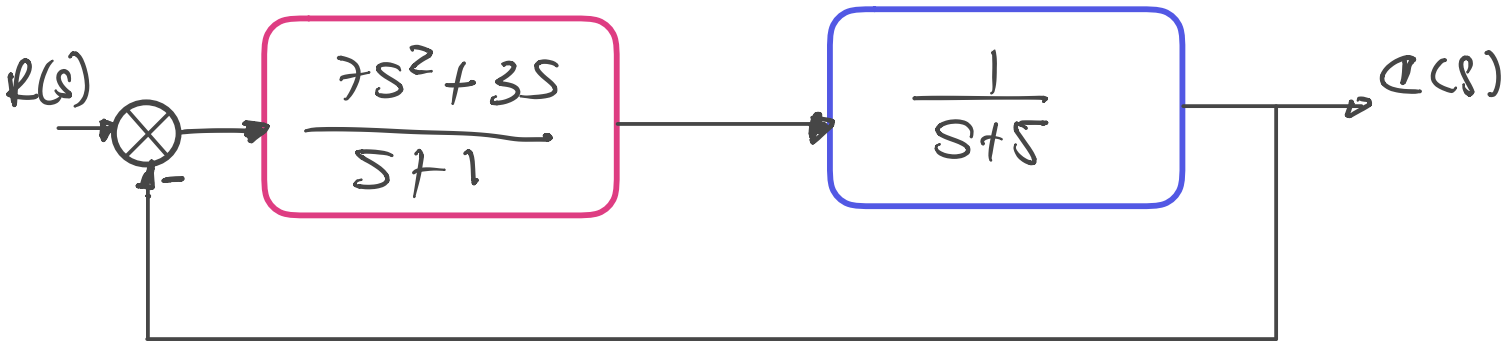


Redibujando:



- $S + 3S = 4S$
- $\frac{S}{S+1}$
- $(4S)\left(\frac{S}{S+1}\right) + 3S = \frac{7S^2+3S}{S+1}$

$$\frac{\frac{1}{s+2}}{1+3\left(\frac{1}{s+2}\right)} = \frac{1}{s+2+3} = \frac{1}{s+5}$$



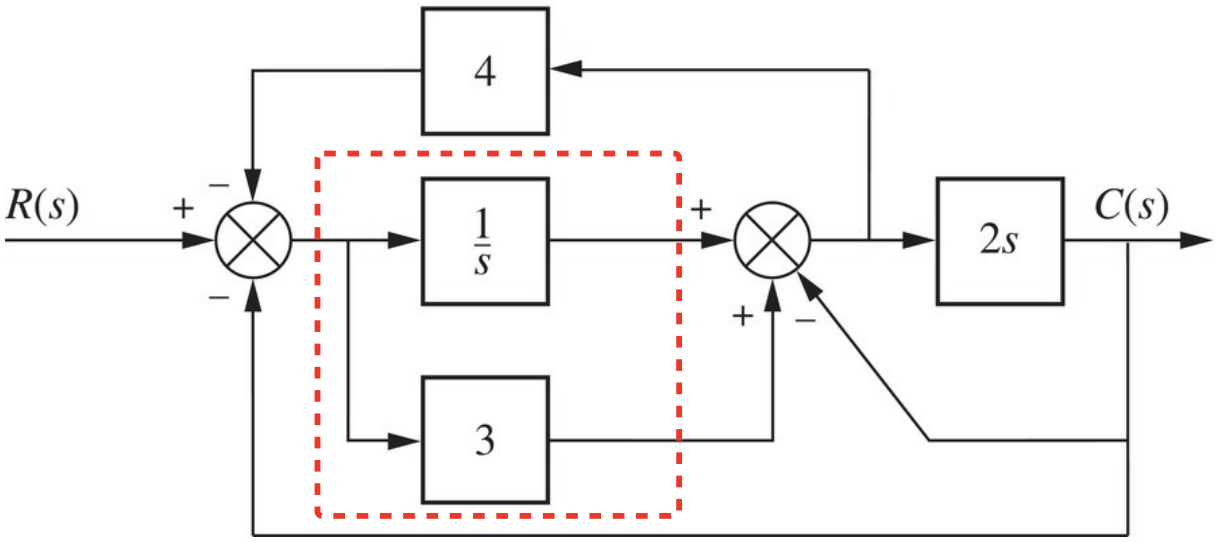
$$T(s) = \frac{\frac{7s^2+3s}{(s+1)(s+5)}}{1+\frac{7s^2+3s}{(s+1)(s+5)}}$$

$$T(s) = \frac{7s^2+3s}{s^2+6s+5+7s^2+3s}$$

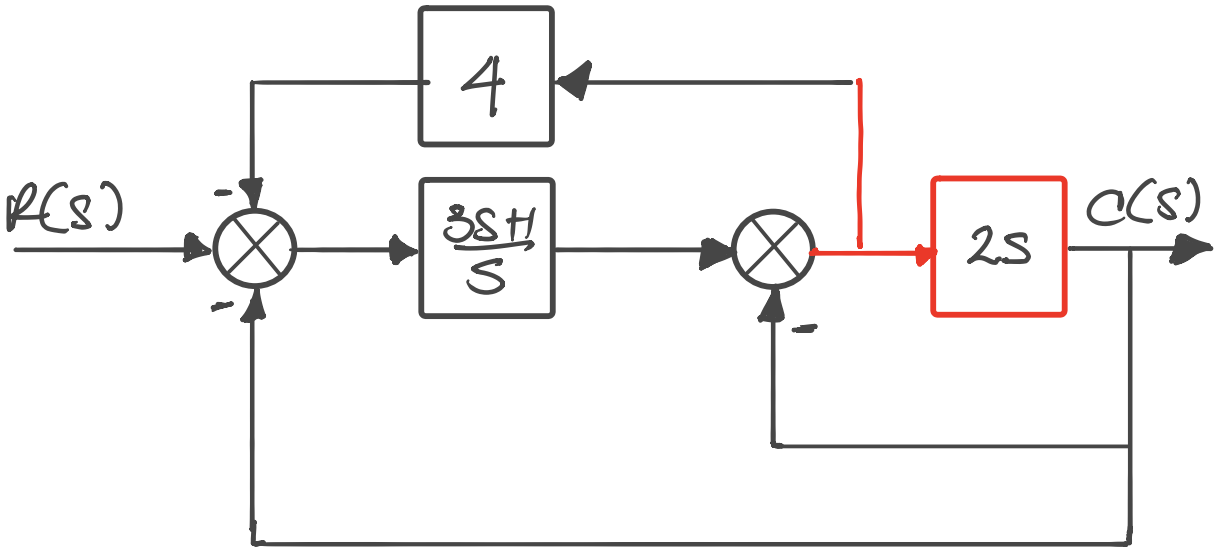
$$T(s) = \frac{7s^2+3s}{8s^2+9s+5}$$

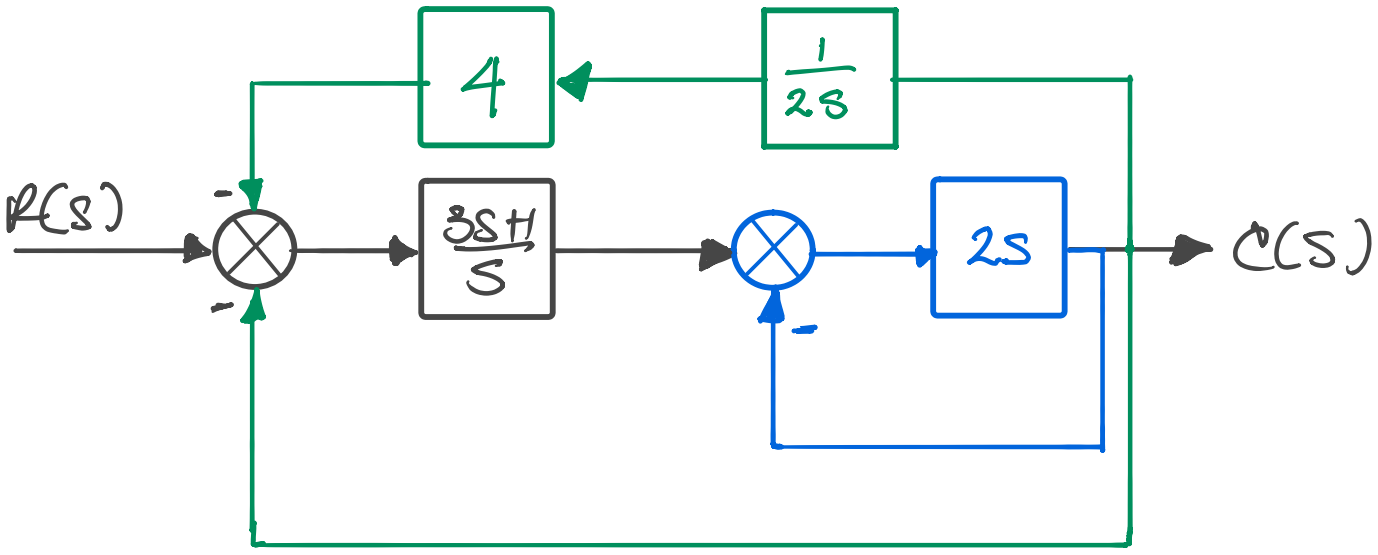
Ejemplo 3

$$\frac{2s(3s+1)}{8s^2+15+4}$$



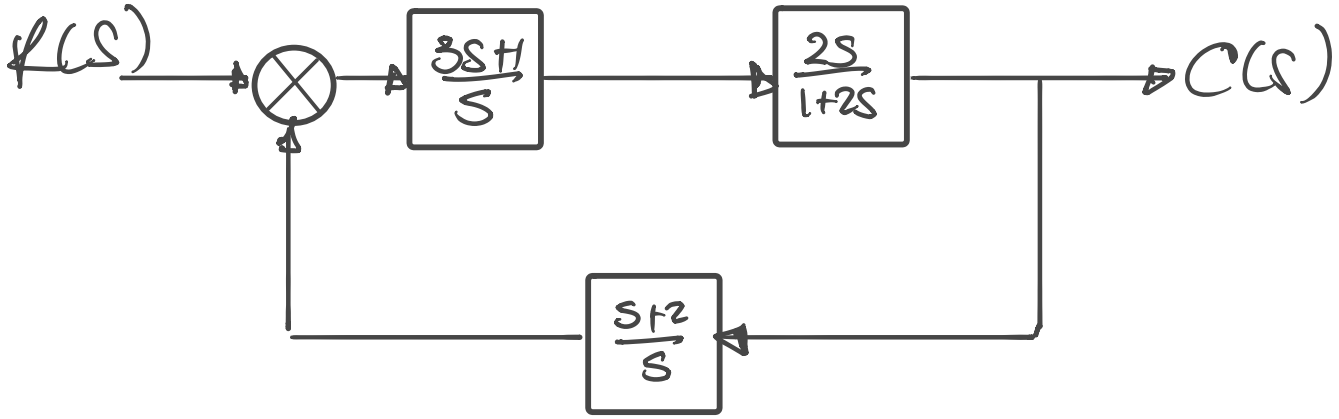
- $\frac{1}{s} + 3 = \frac{3s+1}{s}$





- $\frac{2S}{1+2S}$

- $\frac{4}{2S}+1 = \frac{4+2S}{2S} = \frac{S+2}{S}$



$$T(S) = \frac{\left(\frac{3S+1}{S}\right)\left(\frac{2S}{1+2S}\right)}{1+\left(\frac{S+2}{S}\right)\left(\frac{3S+1}{S}\right)\left(\frac{2S}{1+2S}\right)}$$

$$= \frac{\frac{6S+2}{2S+1}}{\frac{S(2S+1)+(S+2)(3S+1)(2)}{S(2S+1)}}$$

$$T(S) = \frac{S(6S+2)}{8S^2+15S+4}$$