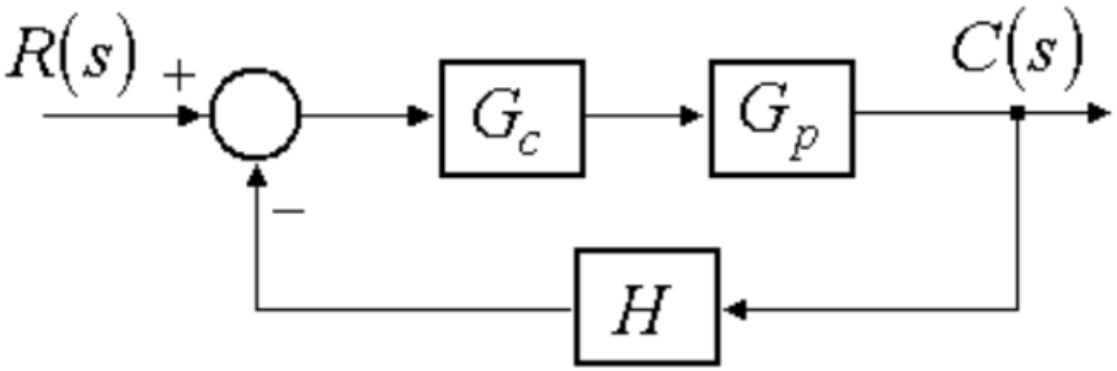


$$M(s) = \frac{N(s)}{D(s)} \quad Función\ de\ transferencia\ deseada$$

$$\frac{N(s)}{D(s)} = \frac{G_c(s)G_p(s)}{1 + G_c(s)G_p(s)H(s)}$$

$$G_c(s) = ?$$

$$N(s)(1 + G_c(s)G_p(s)H(s)) = G_c(s)G_p(s)D(s)$$

$$N(1 + G_cG_pH) = G_cG_pD$$

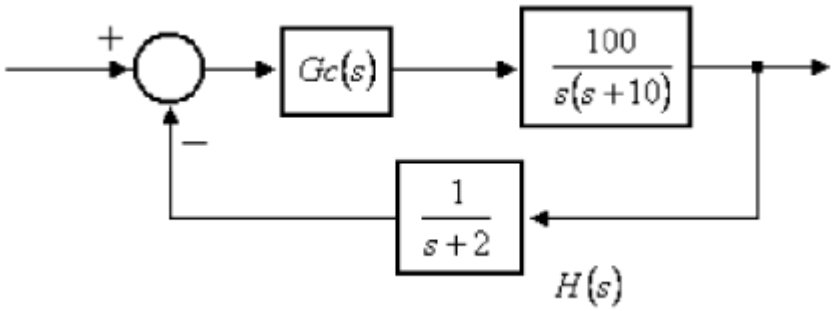
$$N + NG_cG_pH = G_cG_pD$$

$$N = G_cG_pD - NG_cG_pH$$

$$N = G_c(G_p(D - NH))$$

$$\boldsymbol{G_c(s) = \frac{N}{G_p(D - NH)}}$$

Ejemplo:



$$M(s) = \frac{N(s)}{D(s)} = \frac{123.2}{s^2 + 9.99s + 123.2}$$

$$G_p(s) = \frac{100}{s(s+10)}$$

$$H(s) = \frac{1}{s+2}$$

$$\boldsymbol{G_c(s)} = \frac{123.2}{\frac{100}{s(s+10)}\left(s^2 + 9.99s + 123.2 - \frac{123.2}{s+2}\right)}$$

$$\boldsymbol{G_c(s)} = \frac{\boldsymbol{123.2(s^3 + 12s^2 + 20s)}}{\boldsymbol{100s^3 + 1199s^2 + 14318s + 12320}}$$