Notes on Lab 12

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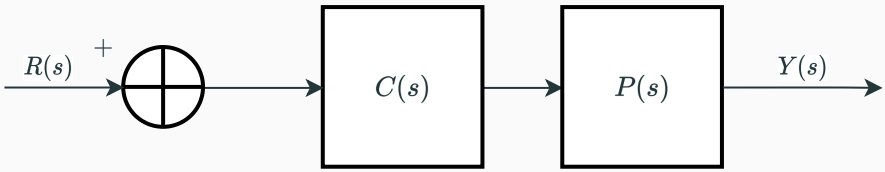
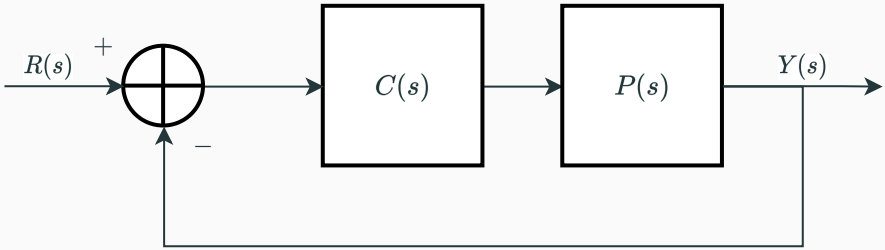
Open loop transfer function



$$\frac{Y(s)}{R(s)} = C(s)P(s)$$

Closed-loop transfer function



$H_{\text{Close}}(s)$ as measured:

$$\frac{Y(s)}{R(s)} = \frac{C(s)P(s)}{1 + C(s)P(s)} \triangleq H_{\text{Close}}(s)$$

Derivation: `https://en.wikipedia.org/wiki/Closed-loop_transfer_function`

Derive $C(s)P(s)$ from $H_{\text{Close}}(s)$:

$$\frac{C(s)P(s)}{1 + C(s)P(s)} = H_{\text{Close}}(s)$$

$$C(s)P(s) = \frac{1}{1 - H_{\text{Close}}(s)}$$