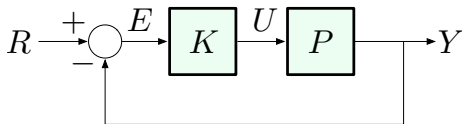


System Type



Let's suppose that KP has n th-order pole at $s = 0$: $KP = \frac{K_0}{s^n}$

$$sE(s) = \frac{1}{\left(1 + \frac{K_0}{s^n}\right) s^k} = \frac{s^{n-k}}{s^n + K_0} \quad \text{— what about } sE(s) \Big|_{s=0} ?$$

Recall: reference $r(t)$ is a polynomial of degree k

Three cases to consider —

- ▶ $n > k$: $e(\infty) = 0$ perfect tracking
- ▶ $n = k$: $e(\infty) = \text{const} \neq 0$ imperfect tracking
- ▶ $n < k$: $e(\infty) = \infty$ no tracking