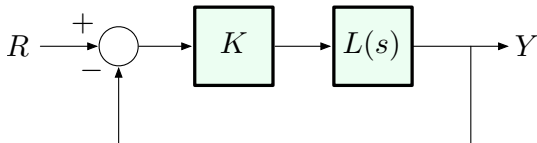


Reminder: Root Locus



where $L(s) = \frac{b(s)}{a(s)} = \frac{s^m + b_1s^{m-1} + \dots + b_{m-1}s + b_m}{s^n + a_1s^{n-1} + \dots + a_{n-1}s + a_n}$, $m \leq n$

Root locus: the set of all $s \in \mathbb{C}$ that solve the *characteristic equation*

$$a(s) + Kb(s) = 0$$

as K varies from 0 to ∞ .

Or equivalently:

The phase condition: The root locus of $1 + KL(s)$ is the set of all $s \in \mathbb{C}$, such that $\angle L(s) = 180^\circ$, i.e., $L(s)$ is real and negative.