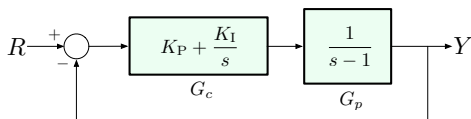# Control Design Using Root Locus

Case study: plant transfer function $G_p(s) = \dfrac{1}{s-1}$

Control objective: stability and constant reference tracking

In earlier lectures, we saw that for perfect steady-state tracking we need PI control

Closed-loop poles are determined by:

$$1 + \left(K_P + \frac{K_I}{s} \right) \left(\frac{1}{s-1} \right) = 0$$