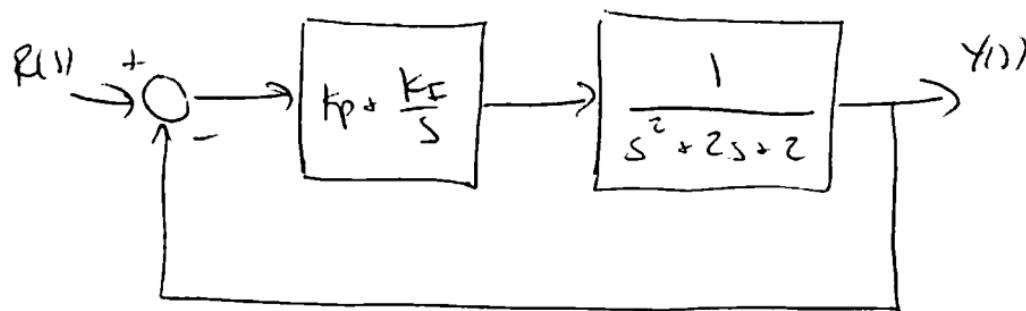


For finite see w.t ramp reference, need type I system

Closed PI control



$$K_V = \lim_{s \rightarrow 0} s \frac{k_p s + k_I}{s} = \frac{1}{s^2 + 2s + 2} = \frac{k_I}{2}$$

$$e_{ss} = \frac{1}{K_V} \rightarrow \frac{2}{k_I} = 0.2$$

choose $k_I \geq 10$

Closed Lwp:

$$\frac{Y(s)}{R(s)} = \frac{k_p s + k_I}{s^3 + 2s^2 + (2+k_p)s + k_I}$$