Table 1: Steady State Error, e_{ss}, for systems of different type numbers, N, and for different inputs.

System Type Number, N	**Step input:** $\mathbf{r}(t) = Au(t)$	**Ramp input:** $\mathbf{r}(t) = At$	**Parabolic input:** $\mathbf{r}(t) = \frac{A}{2}t^2$
0	$e_{ss} = \frac{A}{1+K_p}$	$e_{ss} = \infty$	$e_{ss} = \infty$
1	$e_{ss} = 0$	$e_{ss} = \frac{A}{K_v}$	$e_{ss} = \infty$
2	$e_{ss} = 0$	$e_{ss} = 0$	$e_{ss} = \frac{A}{K_a}$
≥ 3	$e_{ss} = 0$	$e_{ss} = 0$	$e_{ss} = 0$

Table 2: Steady State Error, e_{ss}, for systems of different type numbers, N, and for different inputs for non-unity gain systems. $k_H \triangleq \lim_{s\to 0} H(s) = H(0)$

System Type: N	**Step input:** $\mathbf{r}(t) = Au(t)$	**Ramp input:** $\mathbf{r}(t) = At$	**Parabolic input:** $\mathbf{r}(t) = \frac{A}{2}t^2$
0	$e_{ss} = \frac{A}{k_H}\left[\frac{(a_0 - b_0 k_H)}{a_0}\right]$	$e_{ss} = \infty$	$e_{ss} = \infty$
1	$e_{ss} = 0$	$e_{ss} = \frac{A}{k_H}\left[\frac{(a_1 - b_1 k_H)}{a_0}\right]$	$e_{ss} = \infty$
2	$e_{ss} = 0$	$e_{ss} = 0$	$e_{ss} = \frac{A}{k_H}\left[\frac{(a_2 - b_2 k_H)}{a_0}\right]$
≥ 3	$e_{ss} = 0$	$e_{ss} = 0$	$e_{ss} = 0$

Closed-loop gain:

$$M(s) = \frac{b_m s^m + b_{m-1}s^{m-1} + \cdots + b_1 s + b_0}{s^n + a_{n-1}s^{n-1} + \cdots + a_1 s + a_0}$$