

Q1 d)

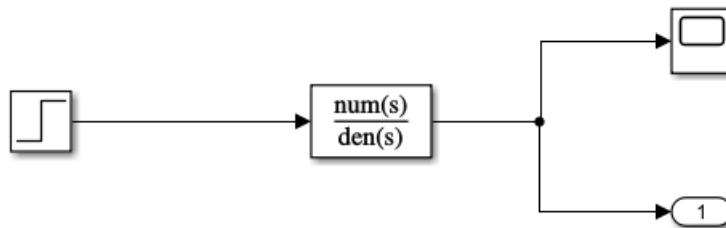
Model Workspace

Workspace data

Data source: MATLAB Code

MATLAB Code:

```
1 Kc = 1;  
2 KI = 5;
```



Transfer Fcn

The numerator coefficient can be a vector or matrix expression. The denominator coefficient must be a vector. The output width equals the number of rows in the numerator coefficient. You should specify the coefficients in descending order of powers of s .

Parameters

Numerator coefficients:

[10*Kc 10*KI] ⋮

Denominator coefficients:

[1 7 10+10*Kc 10*KI] ⋮

Absolute tolerance:

auto ⋮

State Name: (e.g., 'position')

"

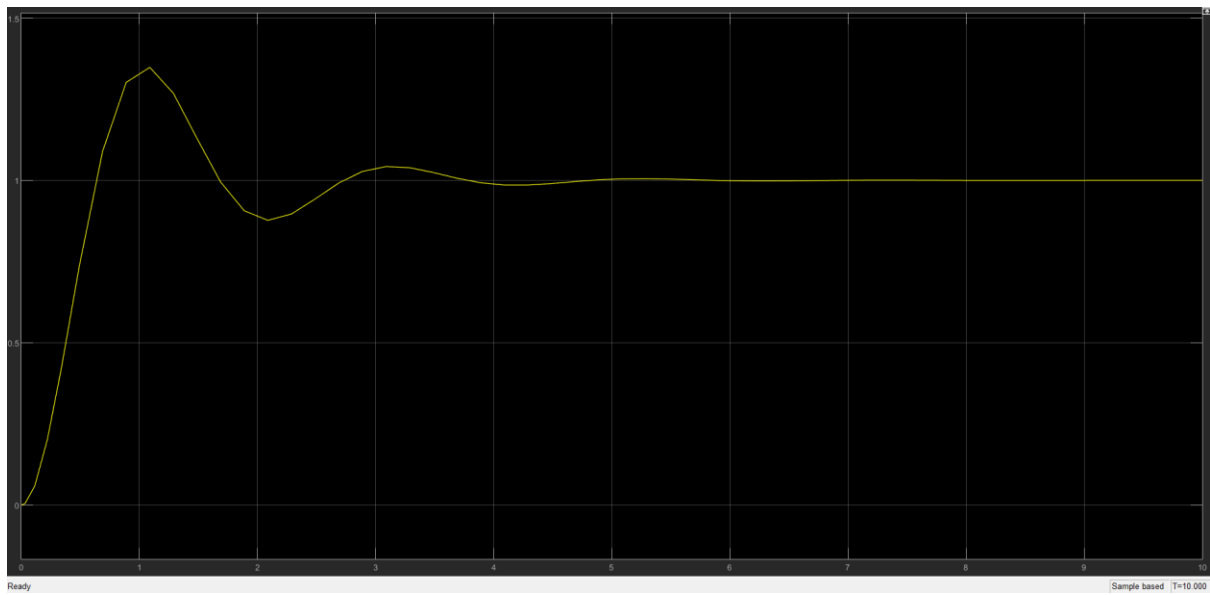


Figure 1.1: $K_c = 1$, $K_I = 5$; Acceptable region

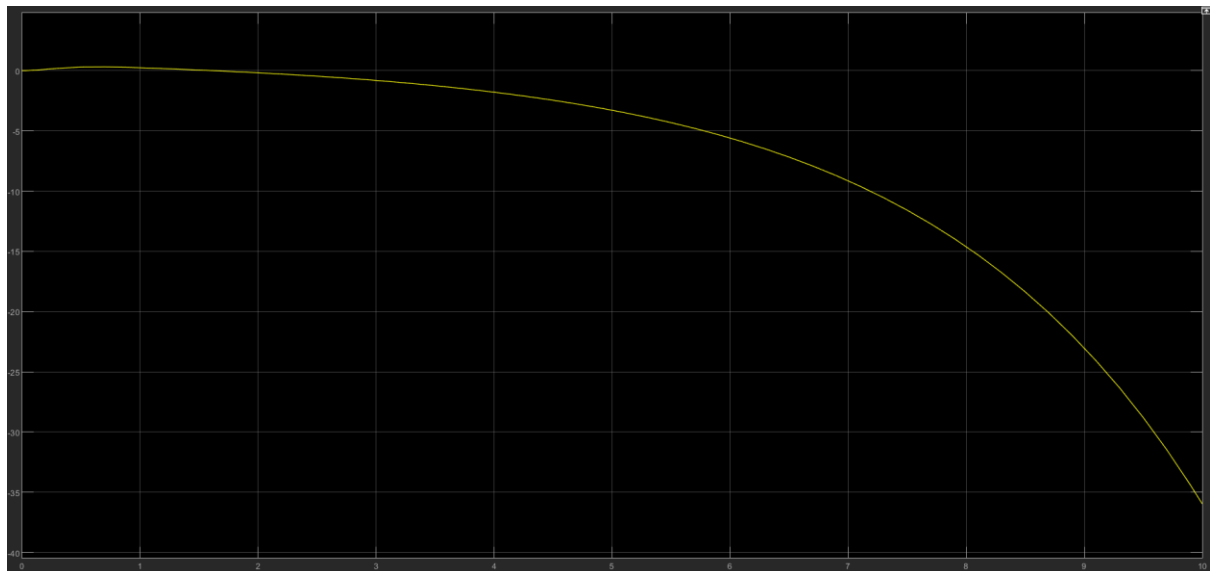


Figure 1.2: $K_c = 1$, $K_I = -1$; K_c acceptable, K_I not in acceptable region. Result: Setpoint not reached; unstable

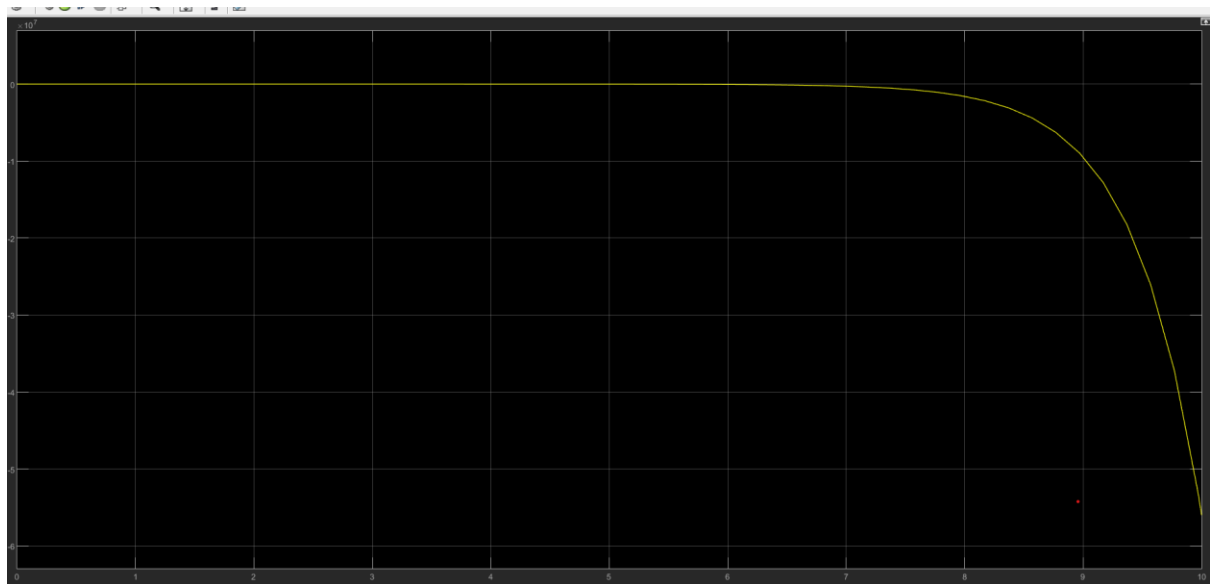


Figure 1.3: $K_c = -2$; $K_I = -1$; Both in unacceptable region. Setpoint not achieved, G_{cl} unstable