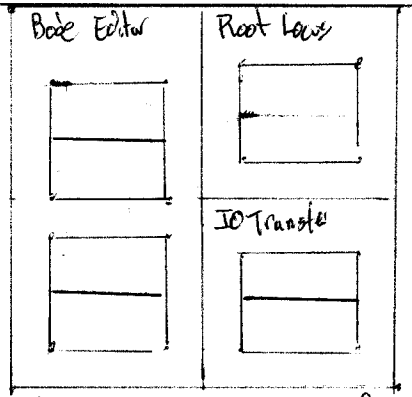
EENG 307 | Matlab -> sisotool | MAR 14 2018

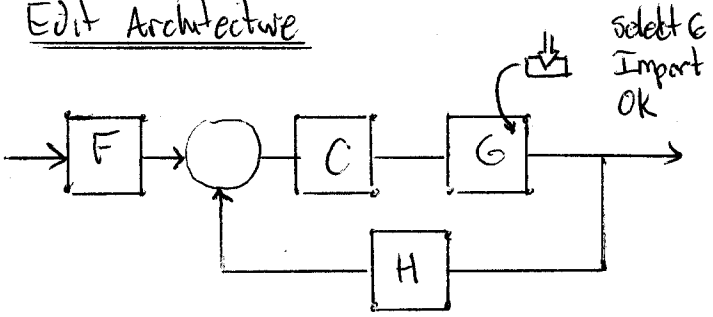
Matlab

```
s = tf('s')
G = 1/((s+1)*(s+2)*(s+10))
sisotool(G)
```



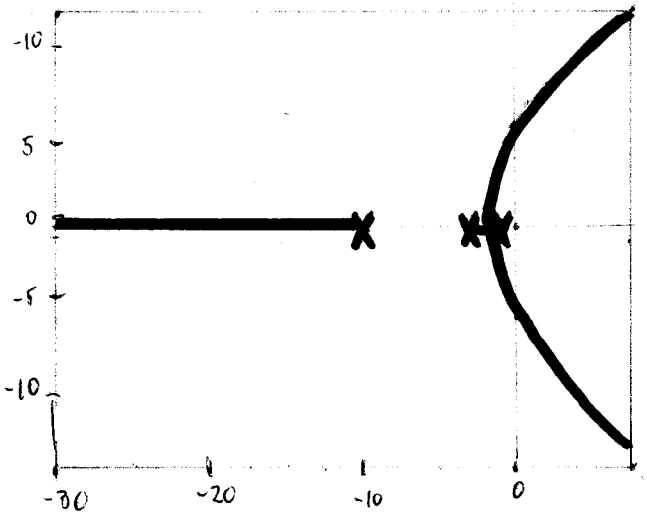
- Close Bode & IO Transfer
- Double Click PZL title bar

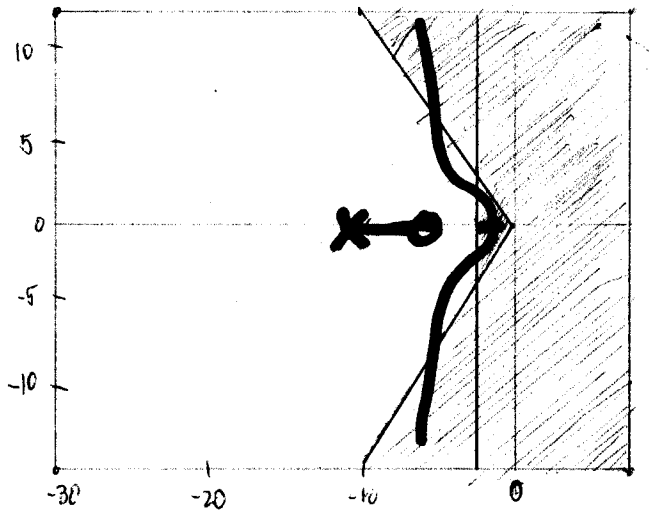
Edit Architecture



Data Browser → C (double click)
Adjust gain C = 80
Zero location = -5

Root Locus





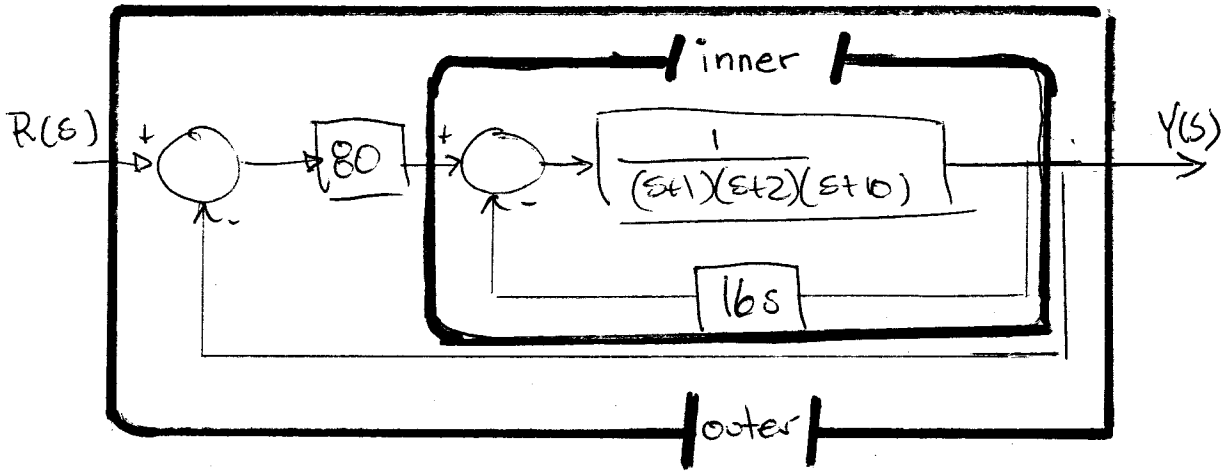
Right mouse → Design Requirement → New
Settling time 1.95
% overshoot 10

Right mouse → Add Pole/Zero → Real zero
add @ -5

$$C(s) = 80(1+0.2s)$$

Verify Design

$$C(s) = 80(1+0.2s) = 16(5+s) = 16\left(s+\frac{80}{16}\right)$$



Continue from previous Matlab

$K_d = 16$

$K_p = 80$

inner = feedback(G, Kd*s)

outer = feedback(Kp*inner, 1)

stepinfo(outer)

step(outer)