

ChE 436 - Process Control MATLAB Tutorial for Stability Analysis

1. Open MATLAB (access through RGS server)



2. In **Command Window** type the commands at the prompt `>>`

```
>> s = tf('s')
```

Transfer function:

s

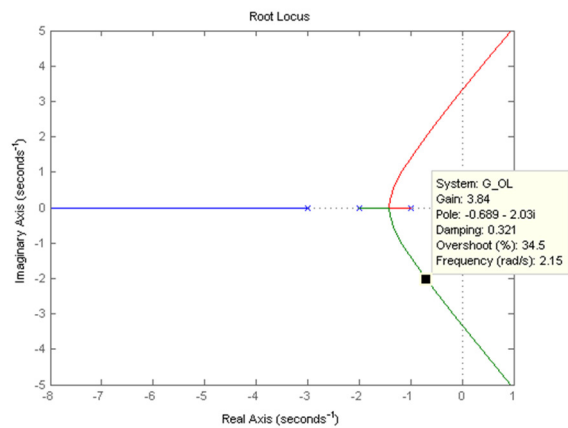
```
>> G_OL = 4 / ((s+1)*(s+2)*(s+3))
```

Transfer function:

4

 $s^3 + 6s^2 + 11s + 6$

```
>> rlocus(G_OL)
```



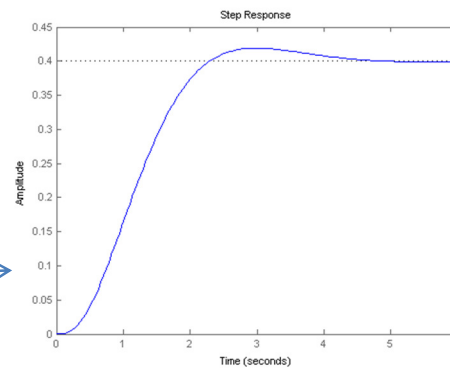
```
>> G_CL = G_OL / (1+G_OL)
```

Transfer function:

$4s^3 + 24s^2 + 44s + 24$

 $s^6 + 12s^5 + 58s^4 + 148s^3 + 217s^2 + 176s + 60$

```
>> step(G_CL)
```



```
>> bode(G_CL)
```

