

```
s = tf('s');  
p1= 1
```

```
p1 = 1
```

```
p2 = 50
```

```
p2 = 50
```

```
p3 =30
```

```
p3 = 30
```

```
K = 1
```

```
K = 1
```

```
zeta = 0.2
```

```
zeta = 0.2000
```

```
Wn =3
```

```
Wn = 3
```

```
z1 = 1
```

```
z1 = 1
```

```
%Variação de Polos
```

```
G1 = K/(s+p1); %1 Polo simples
```

```
G2 = K/((s+p1)*(s+p2)); %2 Polos simples
```

```
G3 = (K*Wn^2)/((s^2 + 2*zeta*Wn*s + Wn^2)); %Polos complexos conjugados
```

```
%Na enquete foi utilizado zeta = 0.60
```

```
zpk(G3)
```

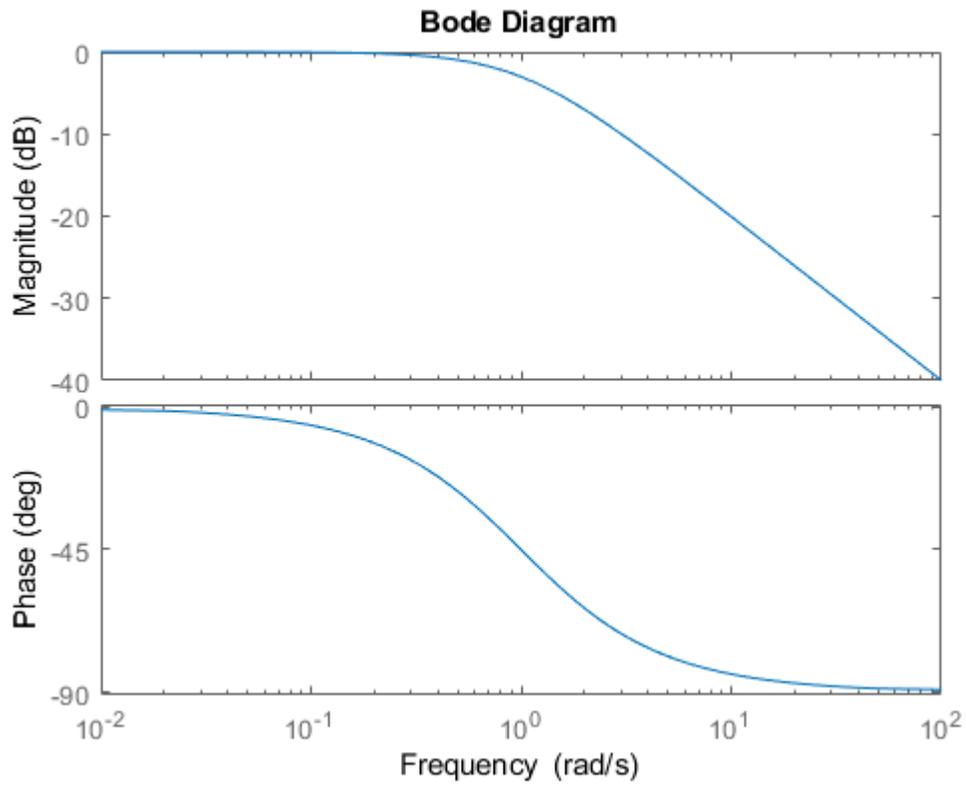
```
ans =
```

```
          9  
-----  
(s^2 + 1.2s + 9)
```

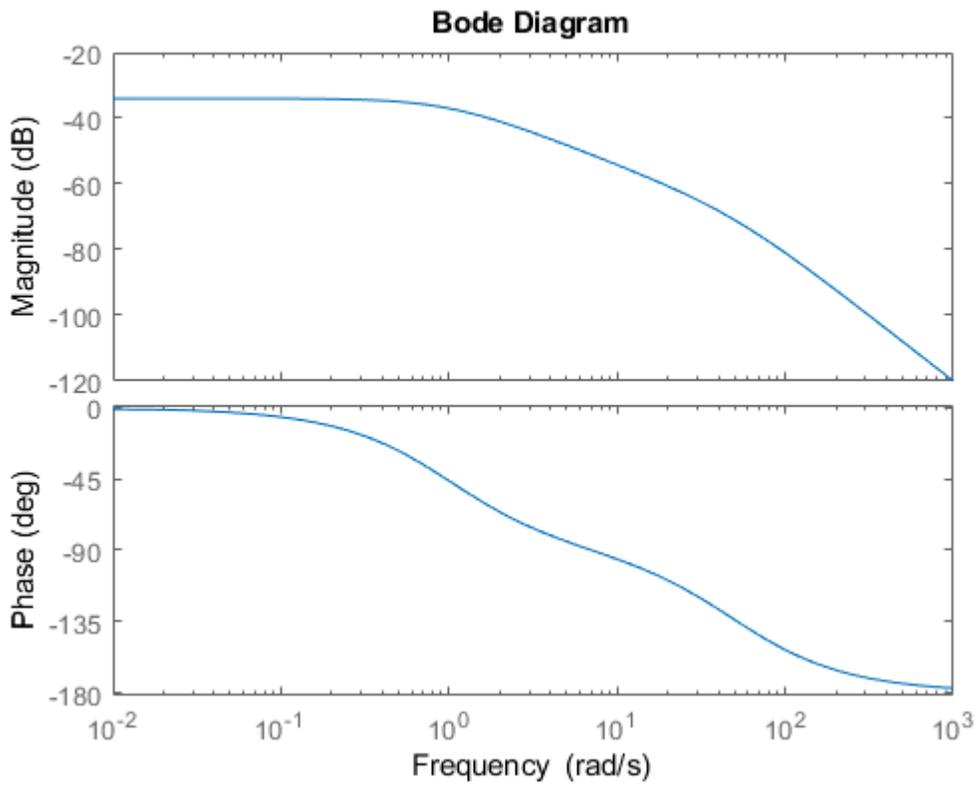
```
Continuous-time zero/pole/gain model.
```

```
G4 = K/s; % Polo na origem
```

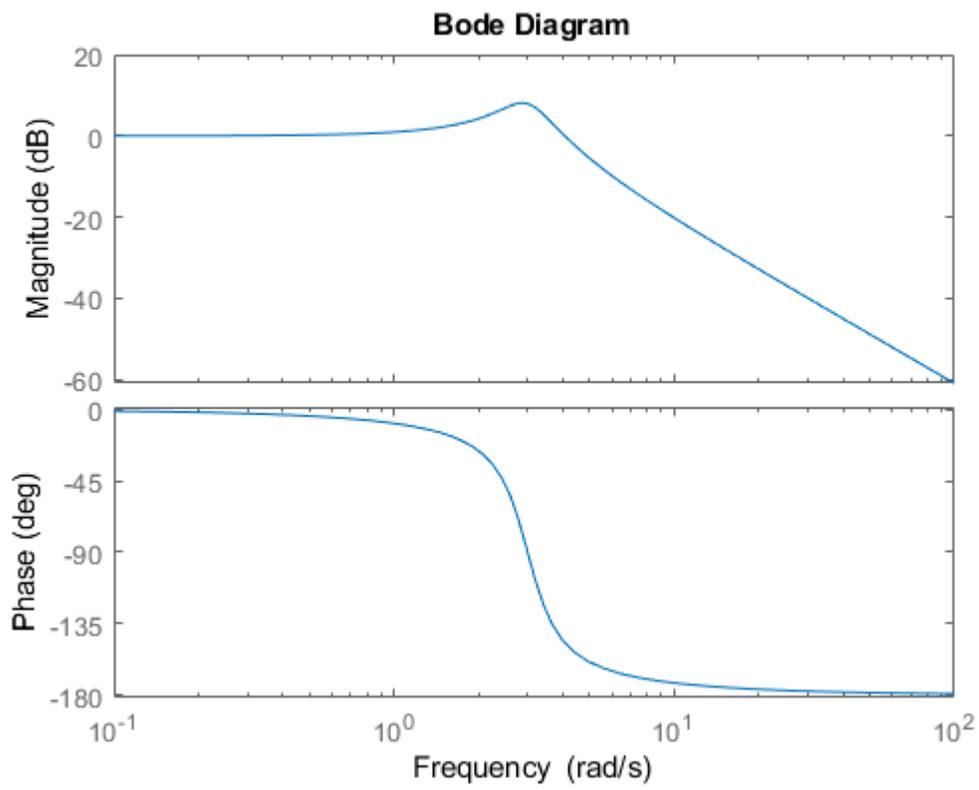
```
bode(G1)
```



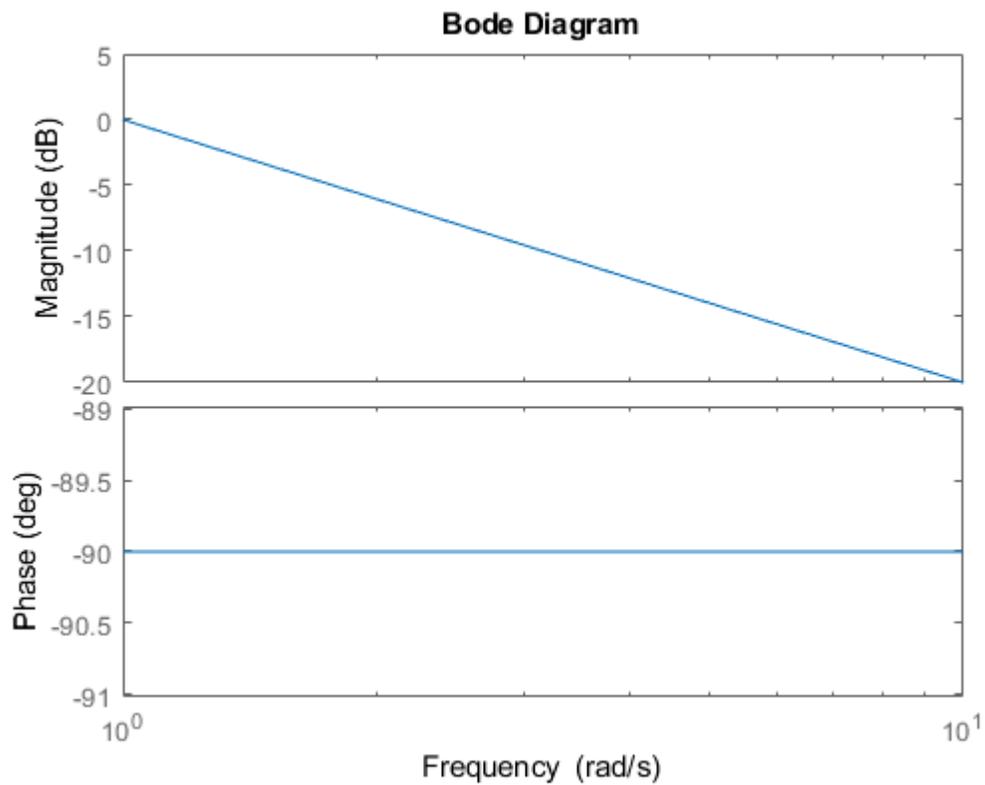
bode(G2)



bode(G3)



bode(G4)

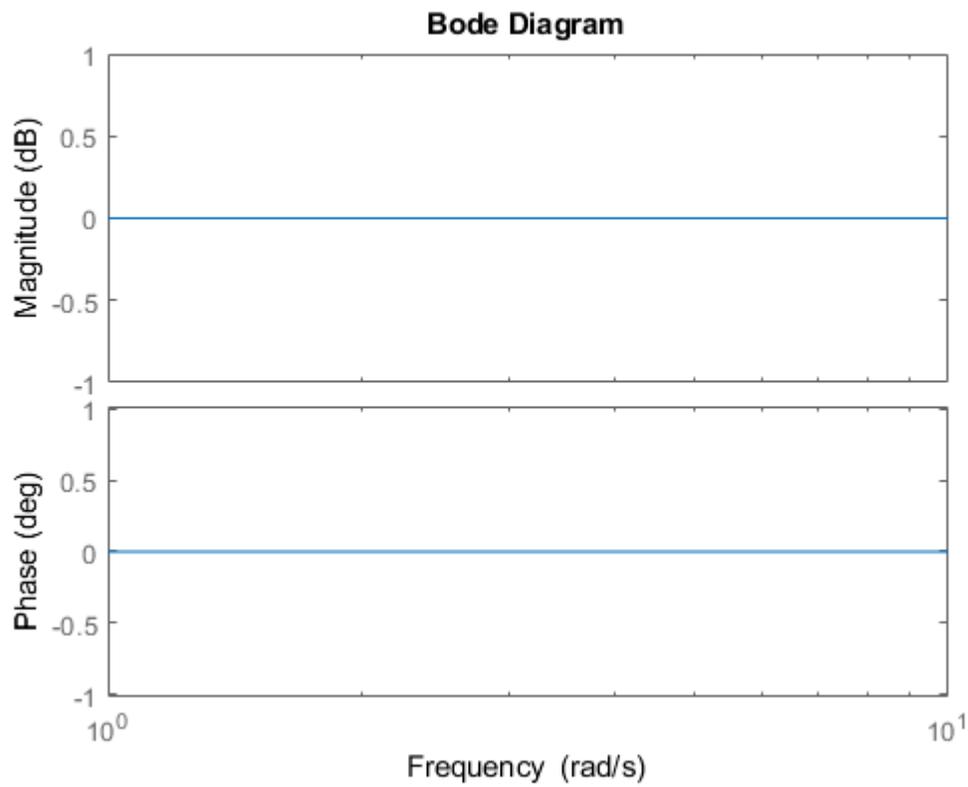


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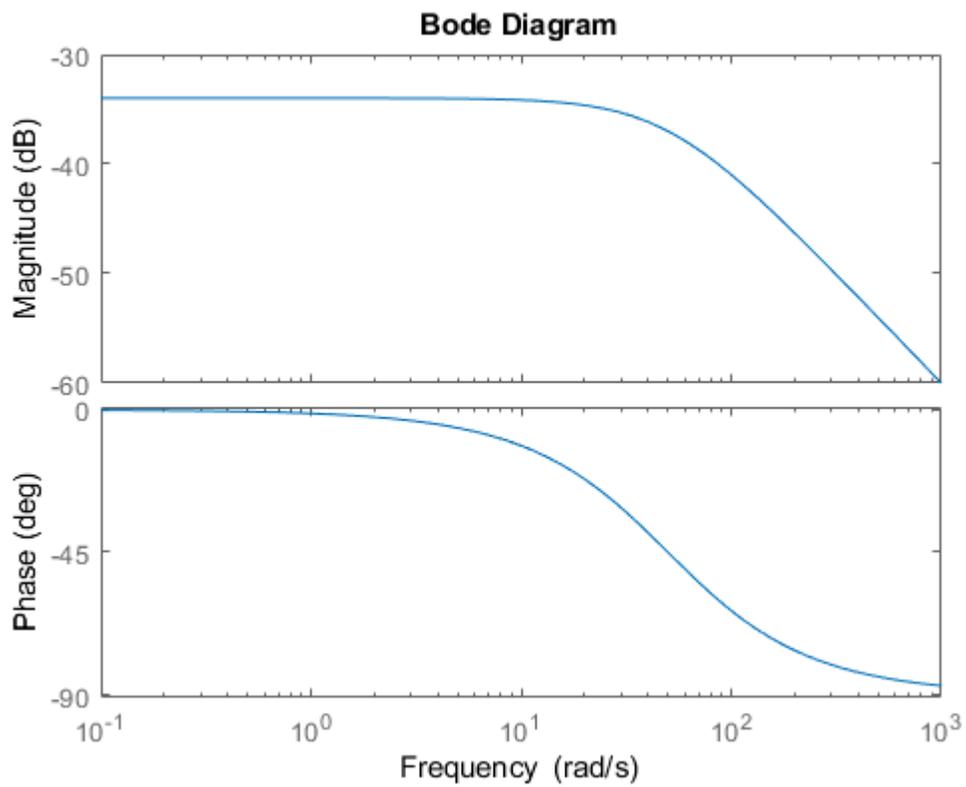
%Variação dos Zeros
G5 = G1*(s+z1); %1 polo real e um zero real
G6 = G2*(s+z1); %2 polos reais simples e um zero real
G7 = G3*(s+z1); % Polos complexos conjugados e zero real
zpk(G7);
G8 = G1*s; %Polo simples e zero na origem
G9 = K*s; %Zero na origem

bode(G5)

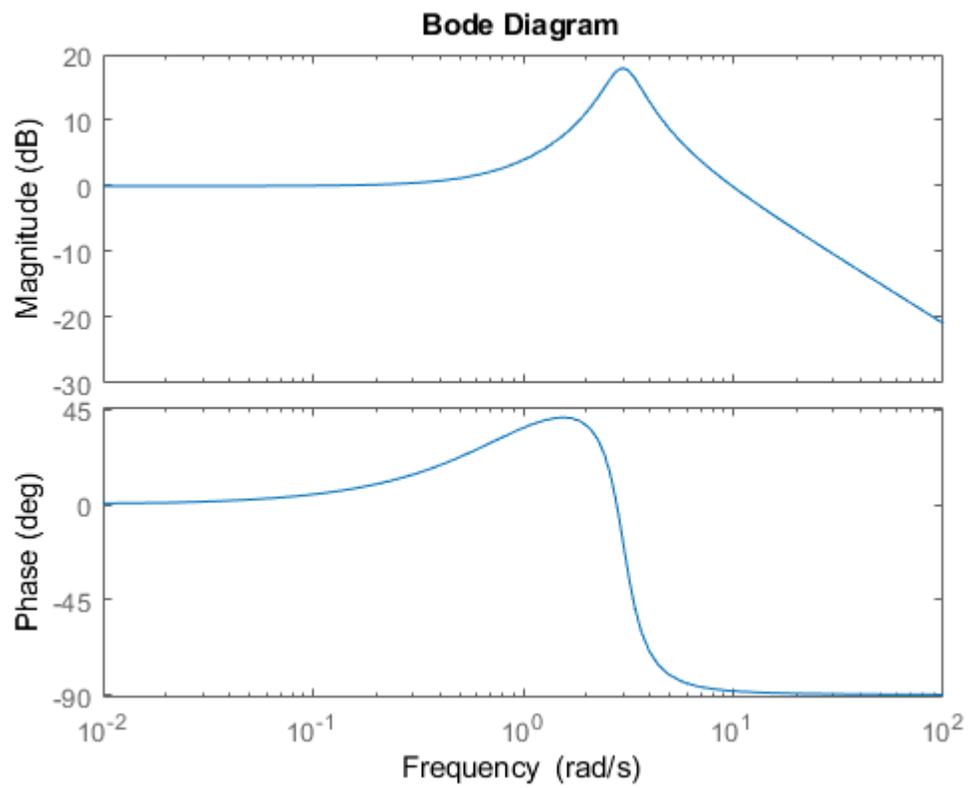
```



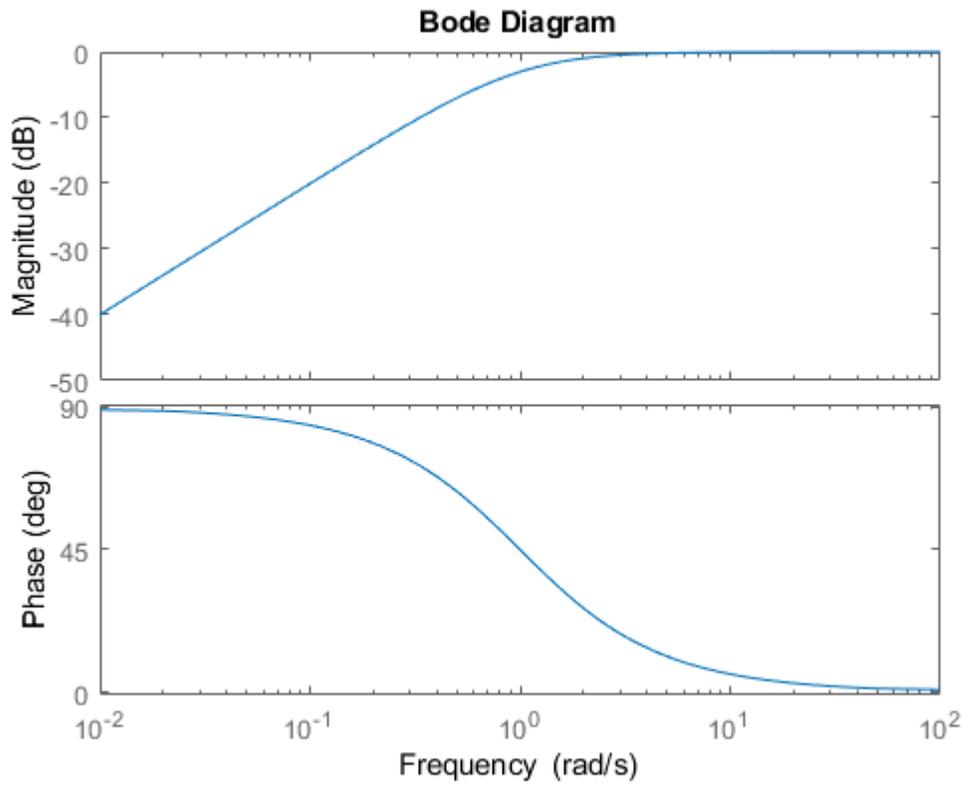
bode(G6)



bode(G7)



bode(G8)



bode(G9)

