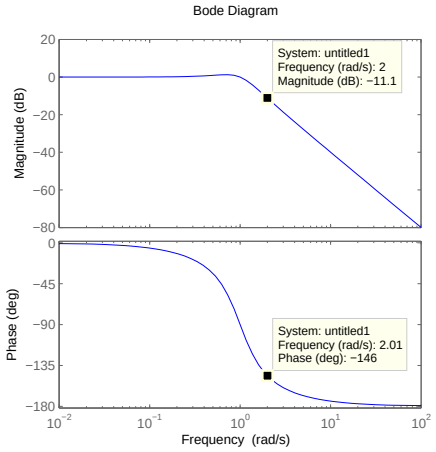
```
s=tf([1 0],1); figure(1)
bode(1/(s^2+s+1))
```



From the Bode Plot, $|G(j2)| = 10^{-11/20} = .28$ and $\angle G(j2) = -146$. Thus at steady state

$$\theta(t) = .28\cos(2t - 146)$$

This is close to the answer we got using the linear approximation, but not exact. Note that the actual phase slope is higher than $-90\circ$/dec when the damping ratio is small ($\zeta = 0.5$ in this case)