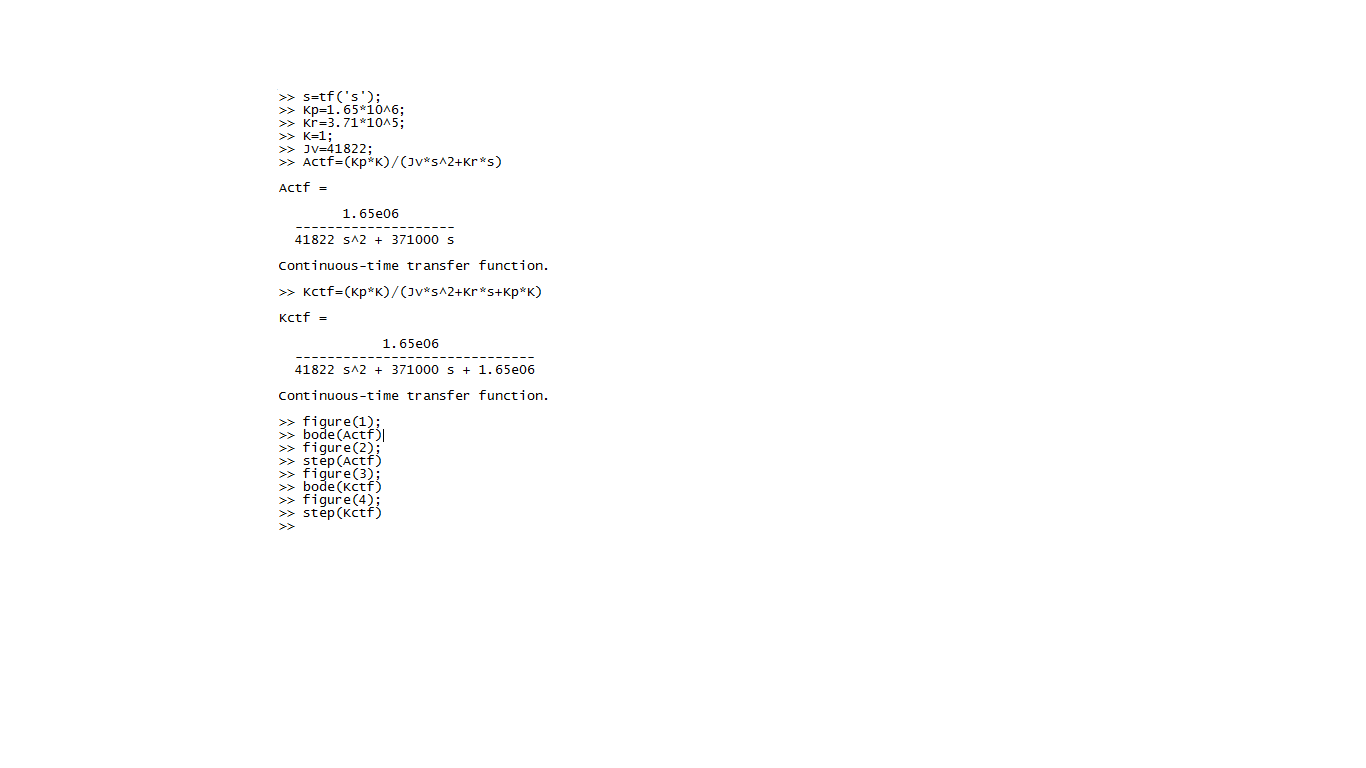
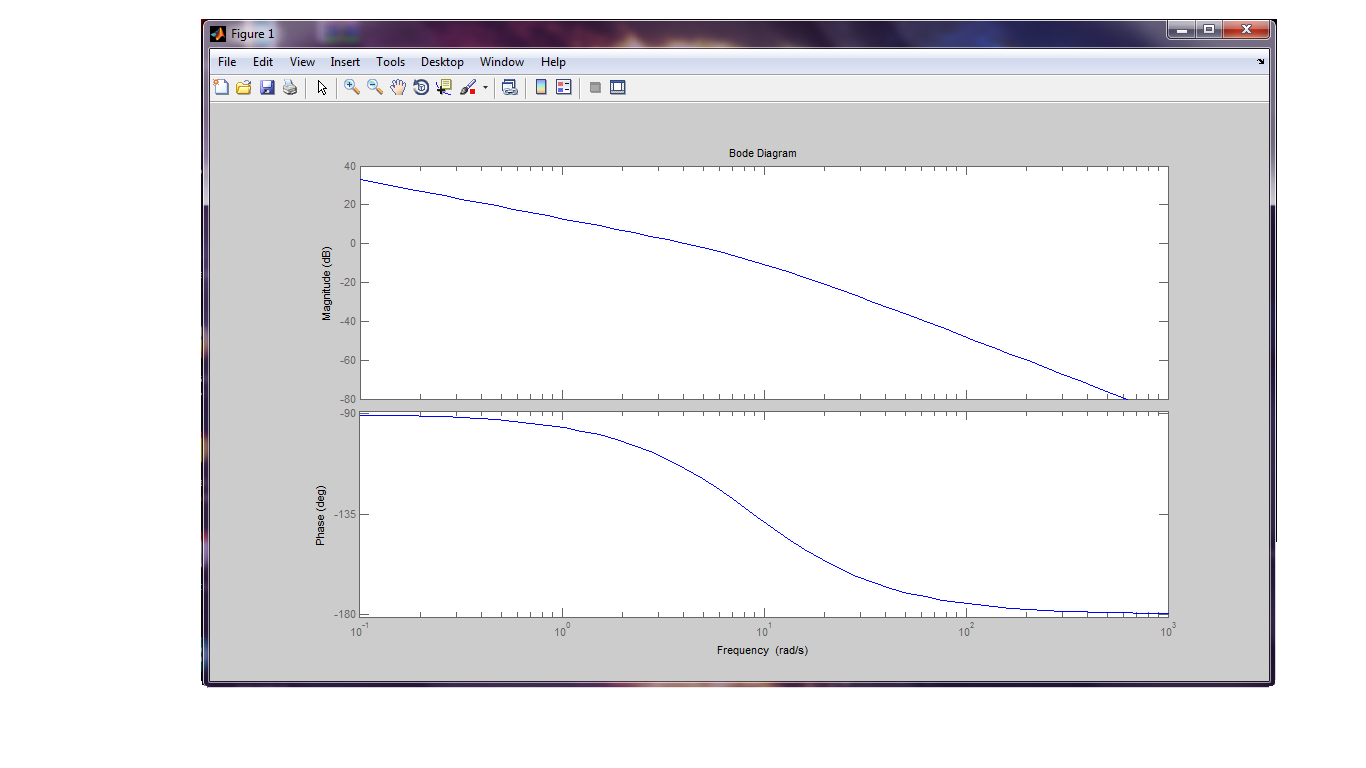
**2)**

1. Open loop transfer function: Actf(s)

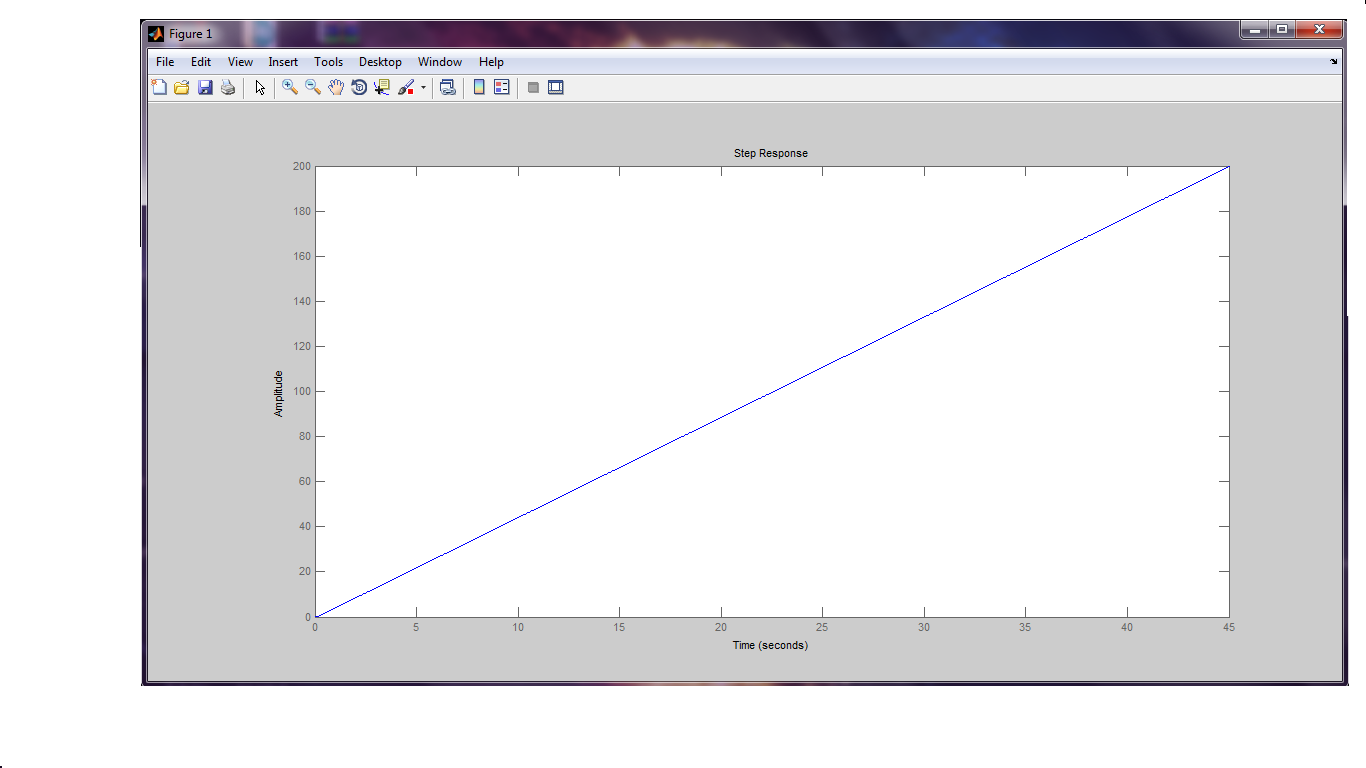
Closed loop transfer function: Kctf(s)



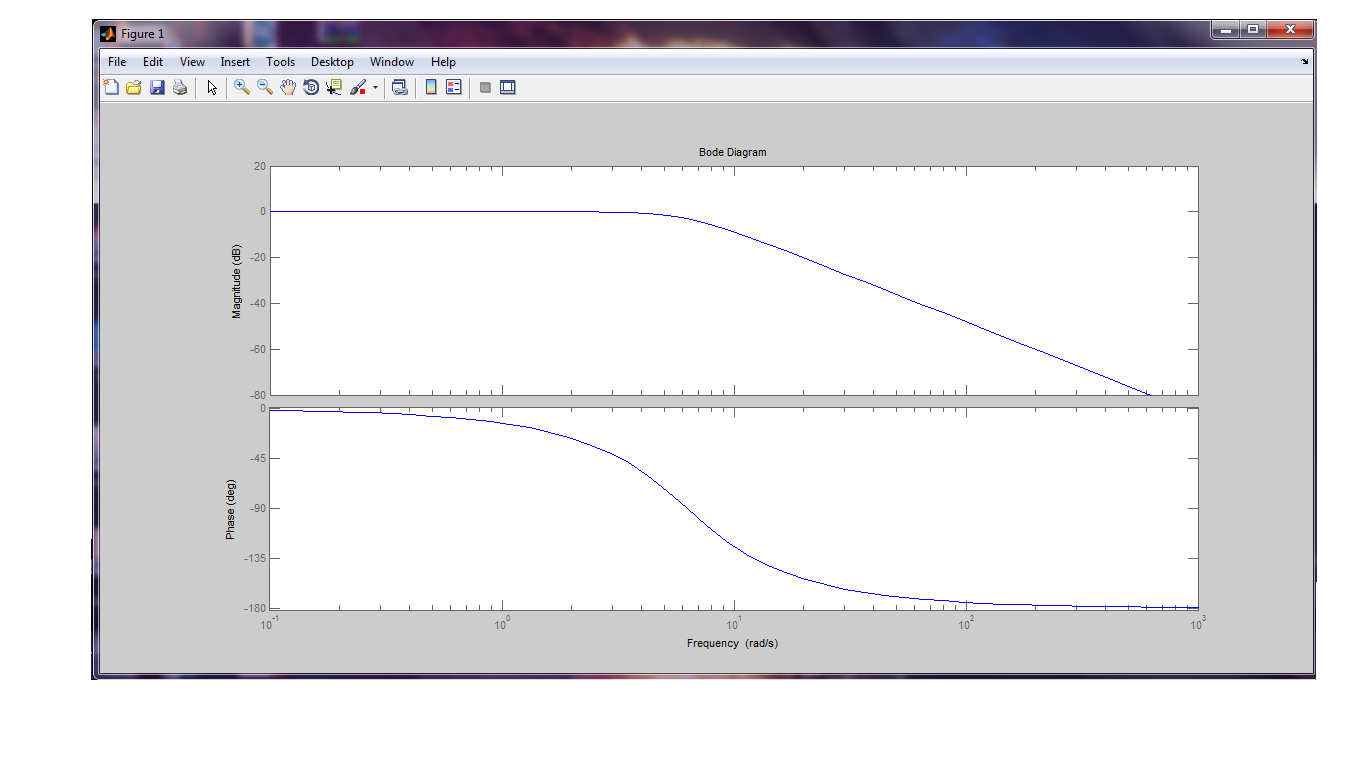




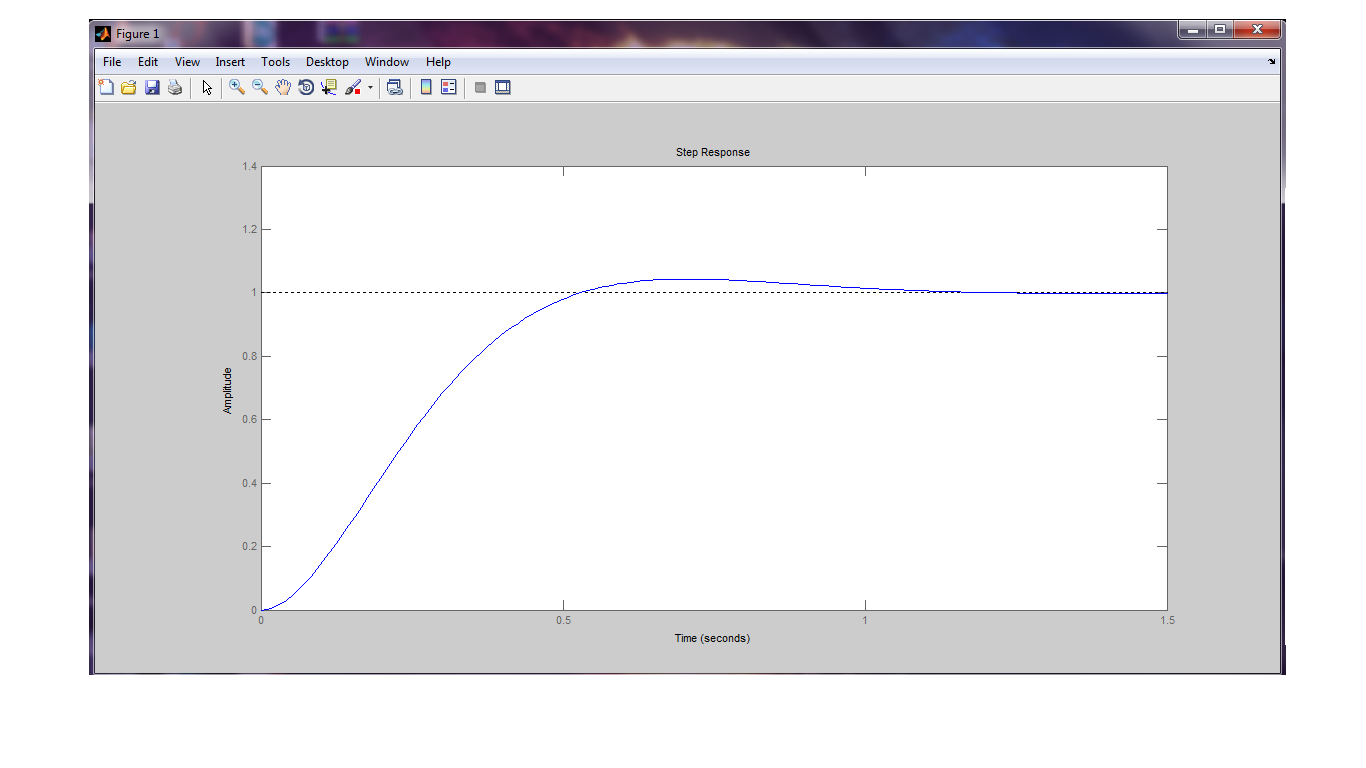
Bode of Open loop system



Unit step response of open loop system



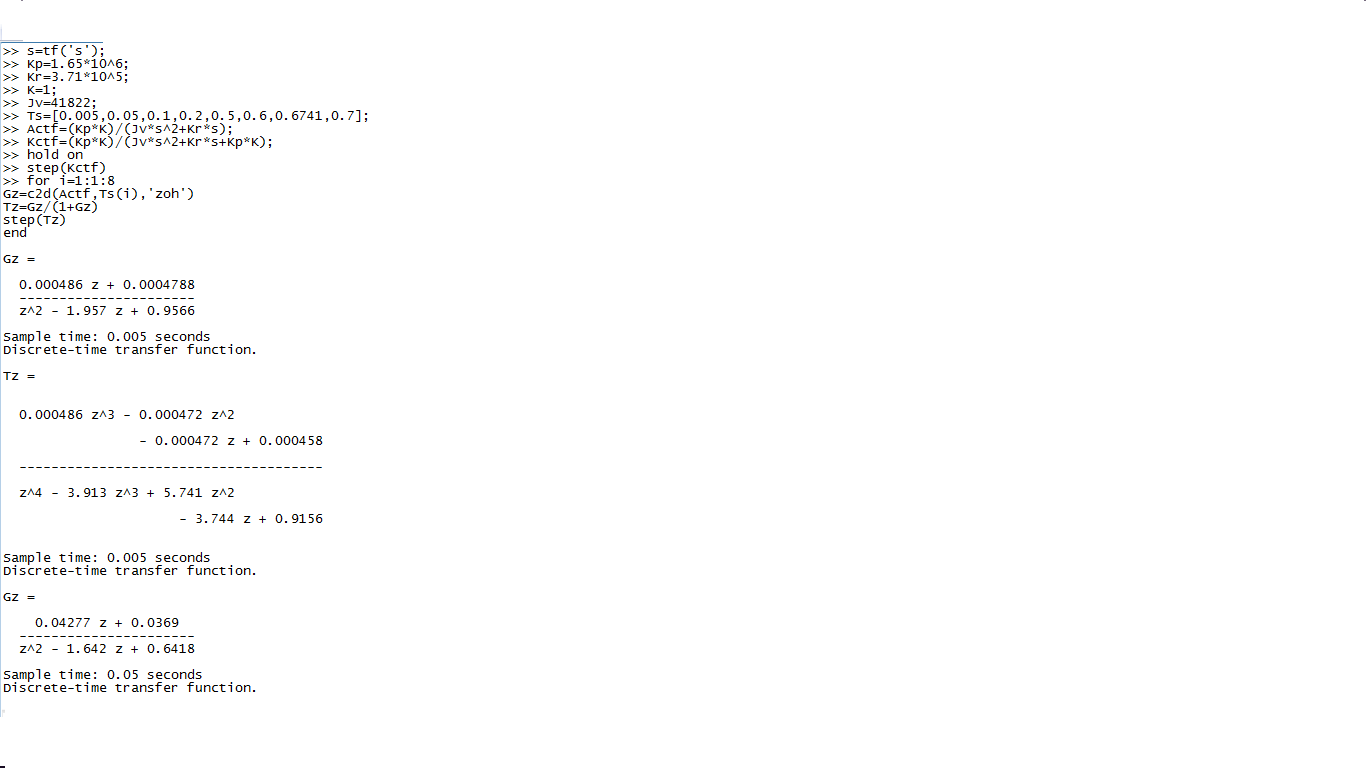
Bode of closed loop system

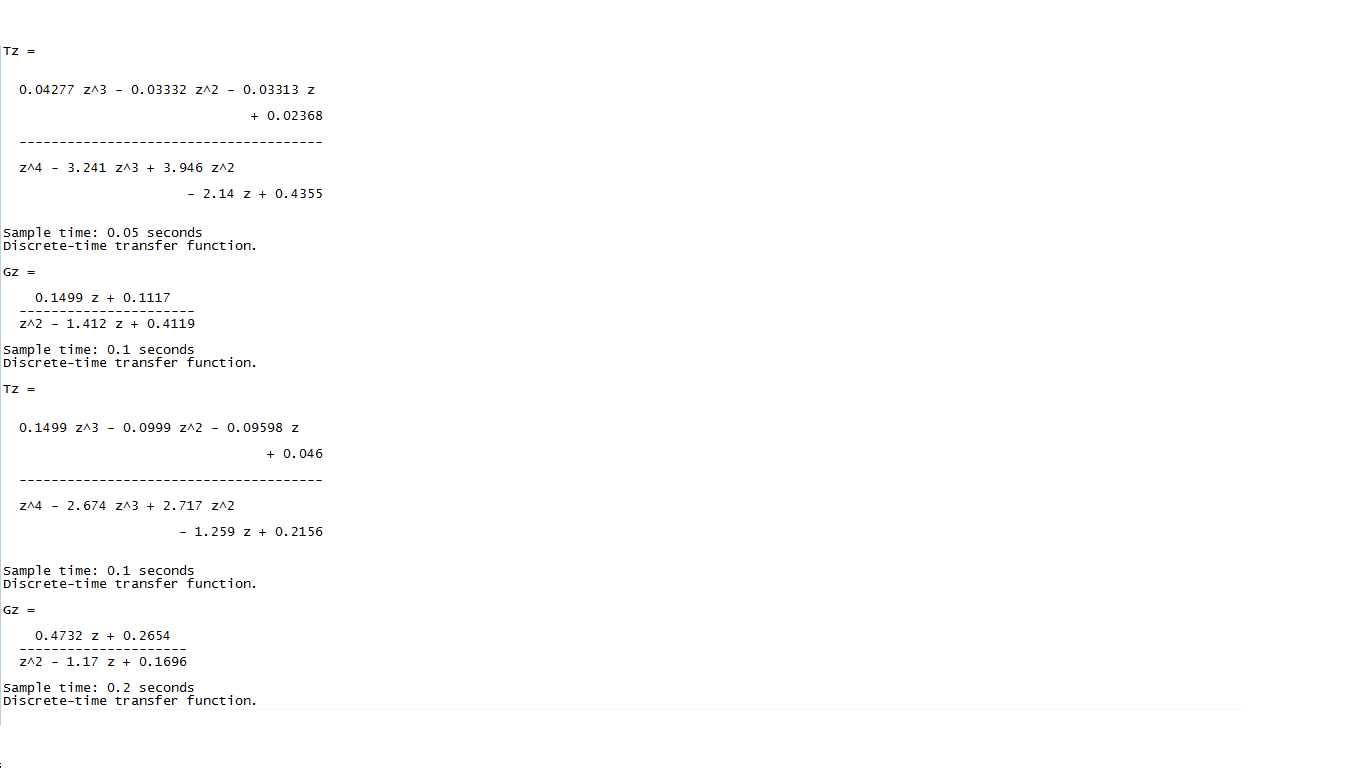


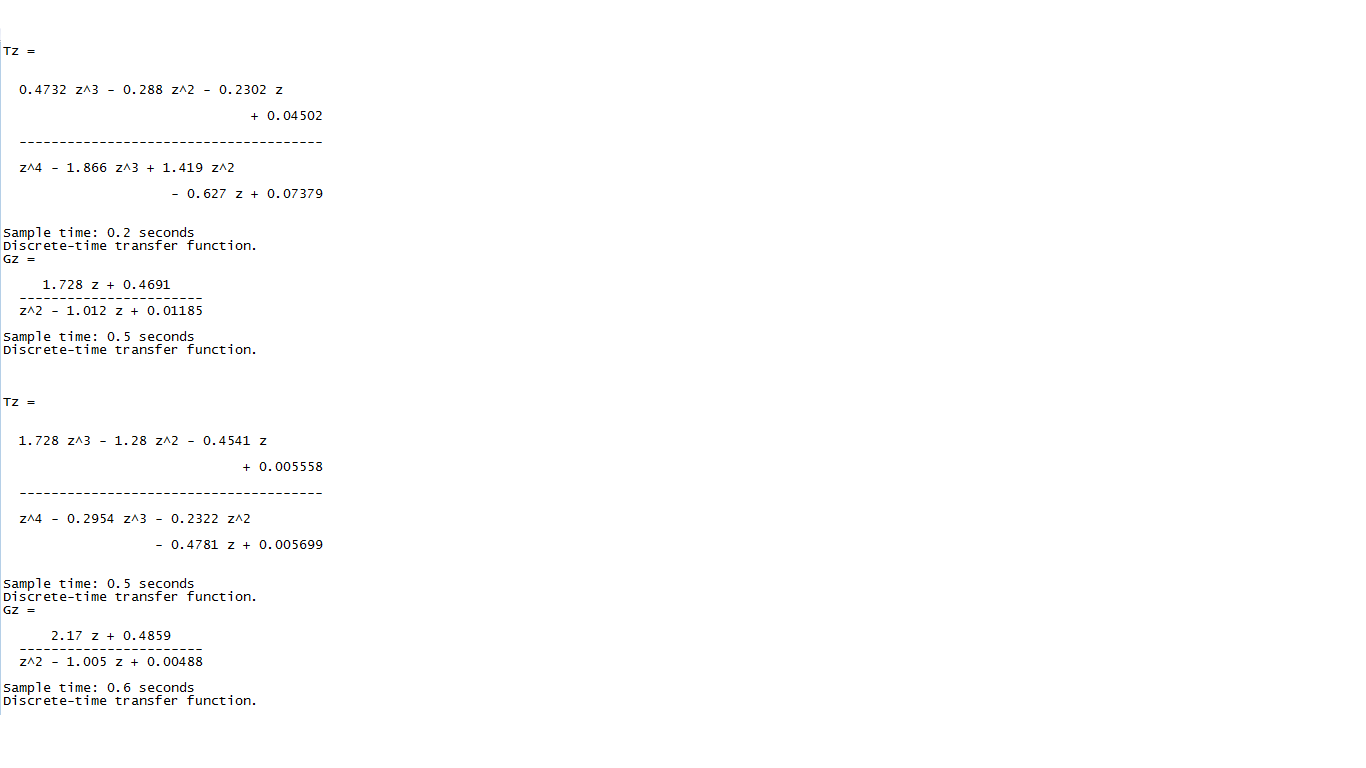
Unit step response of closed loop system

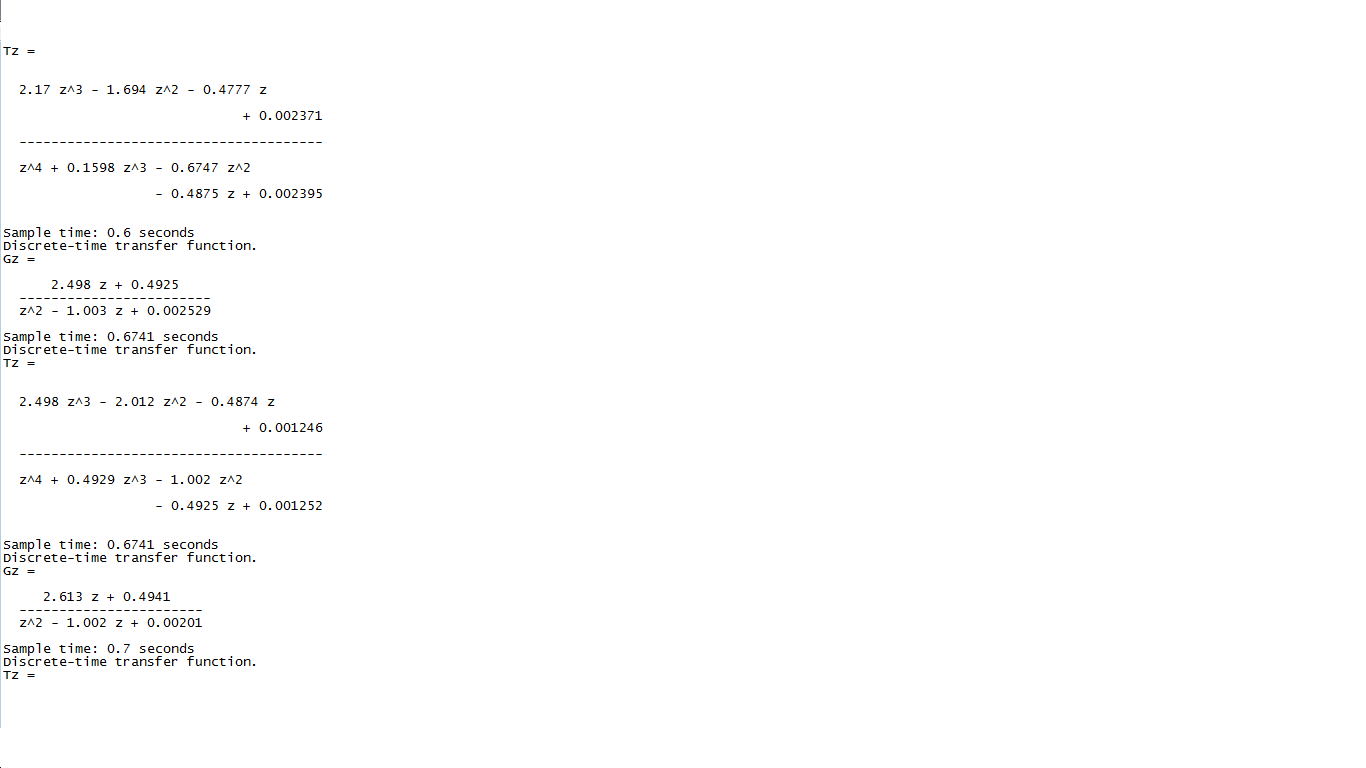
**B)**

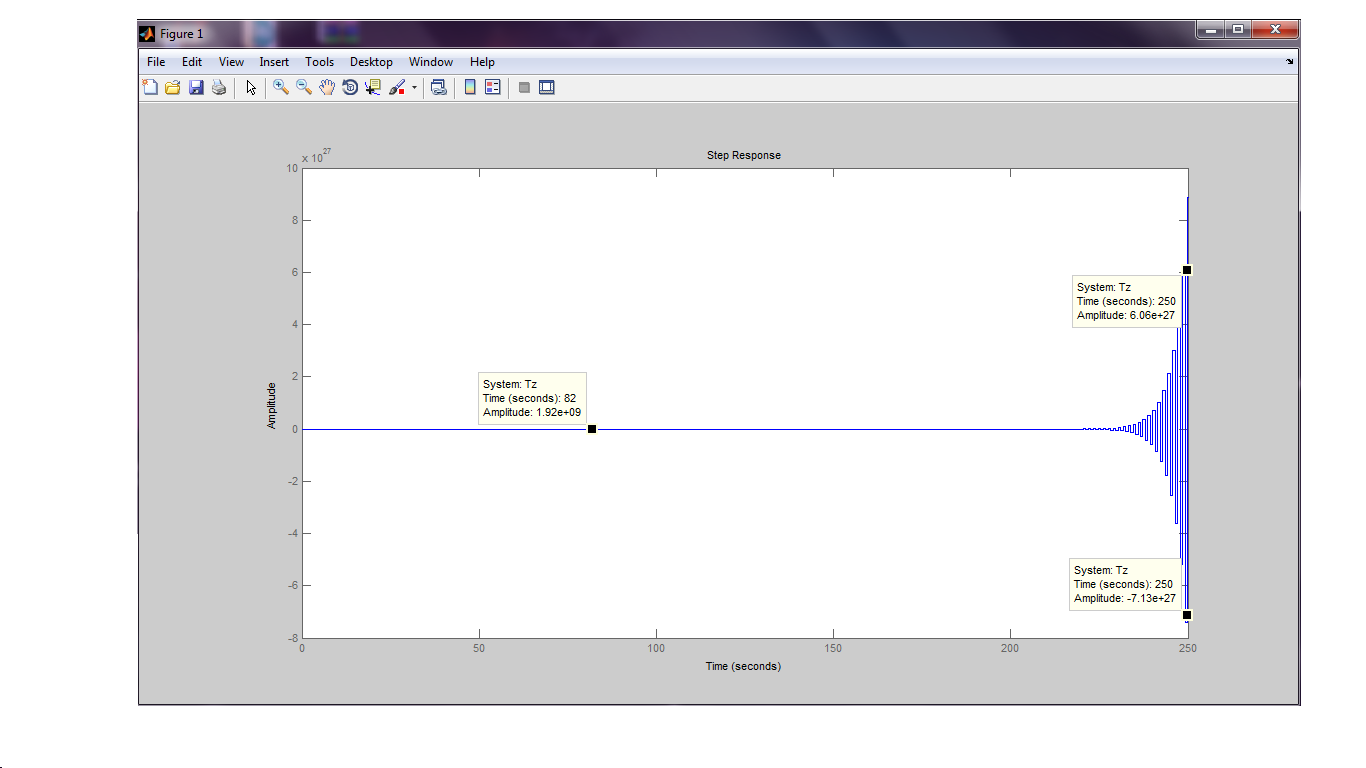
* **İ**





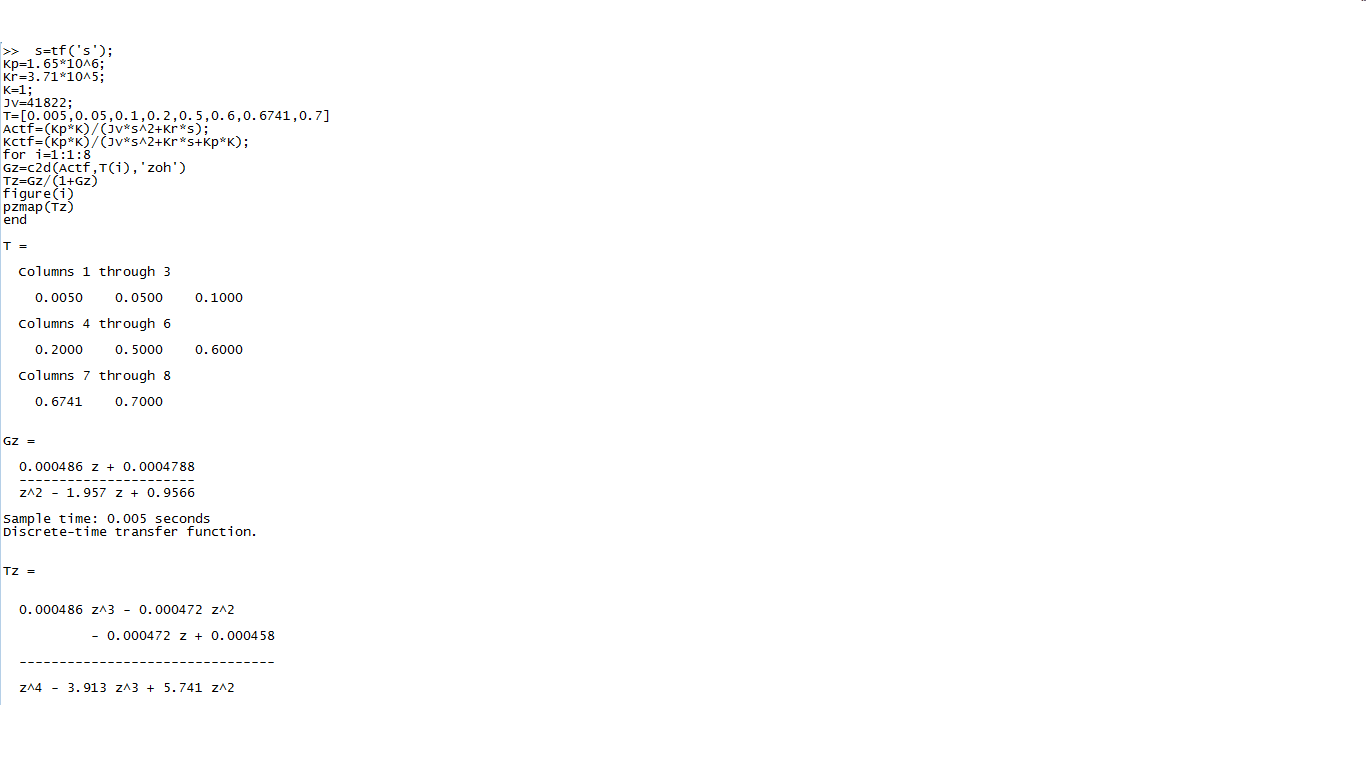


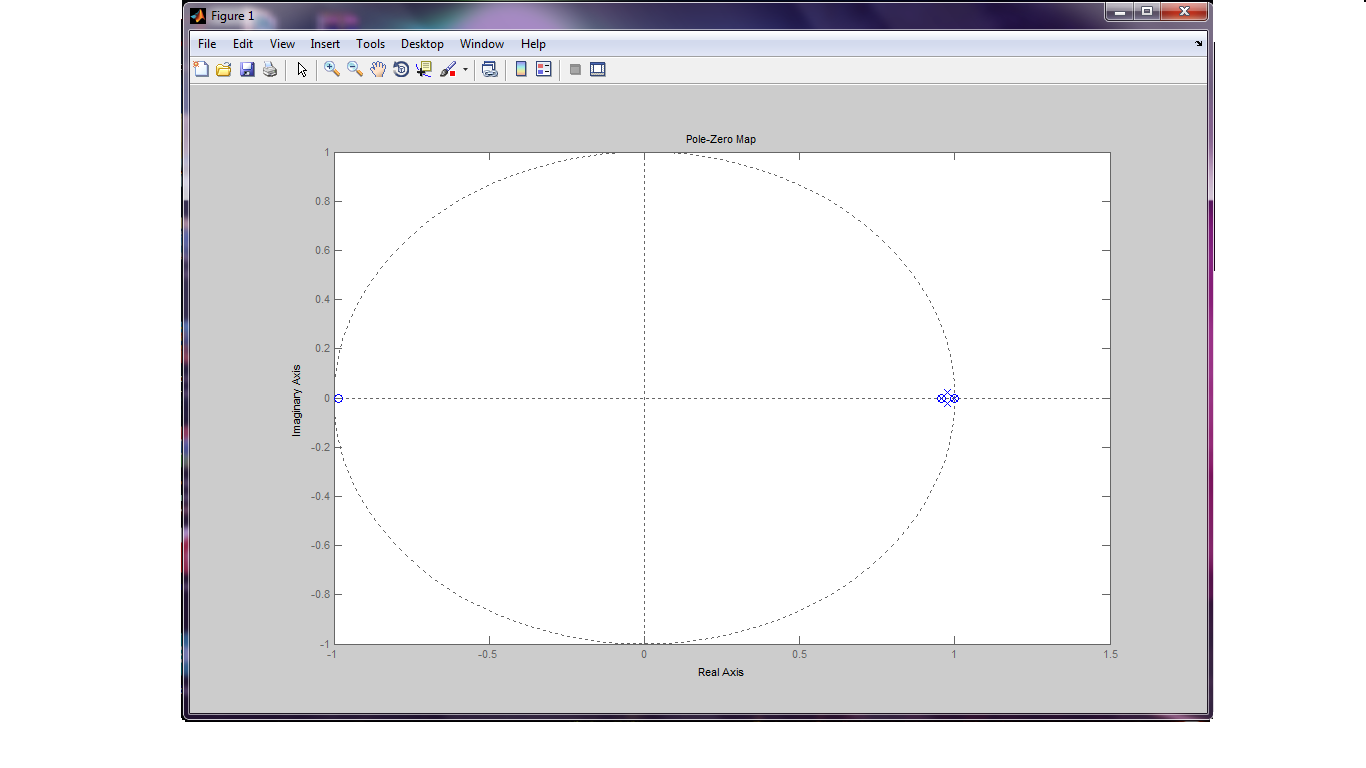




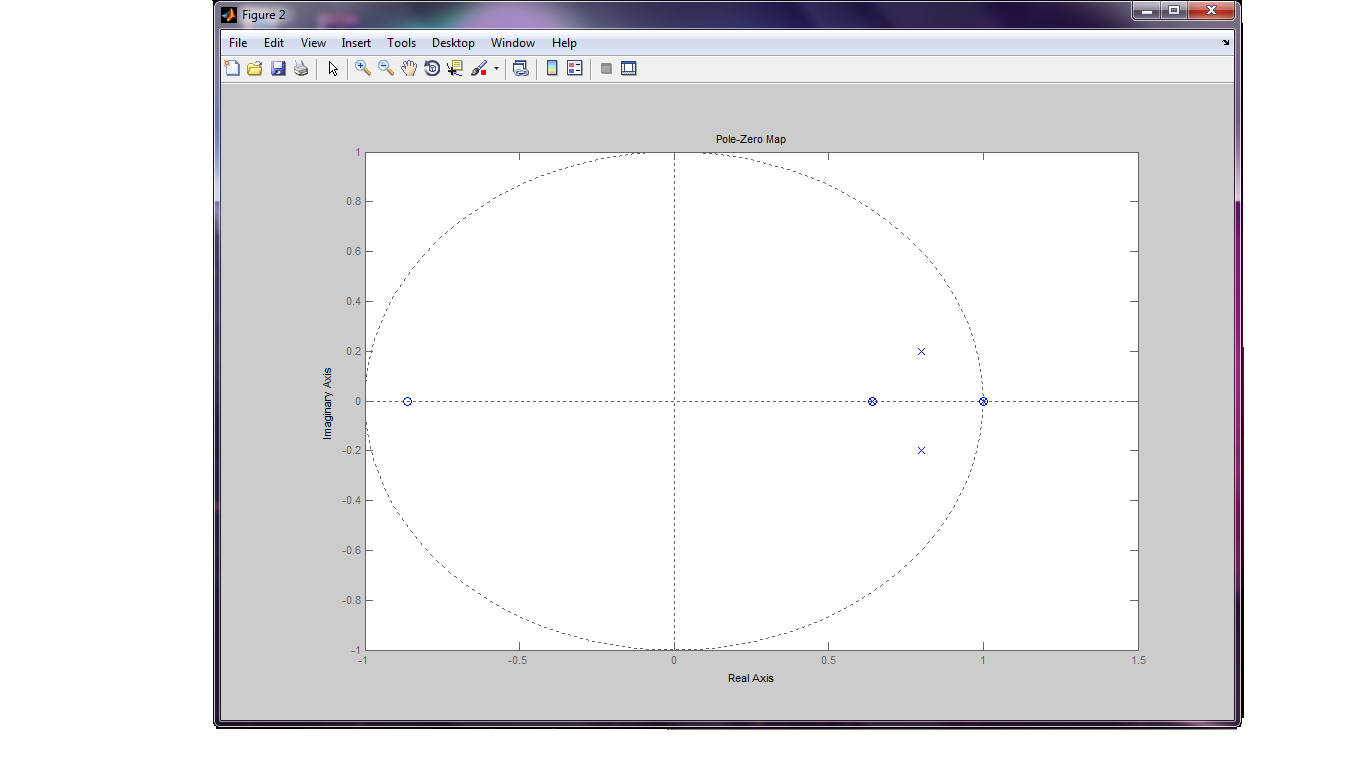
Unit step response

* **ii**

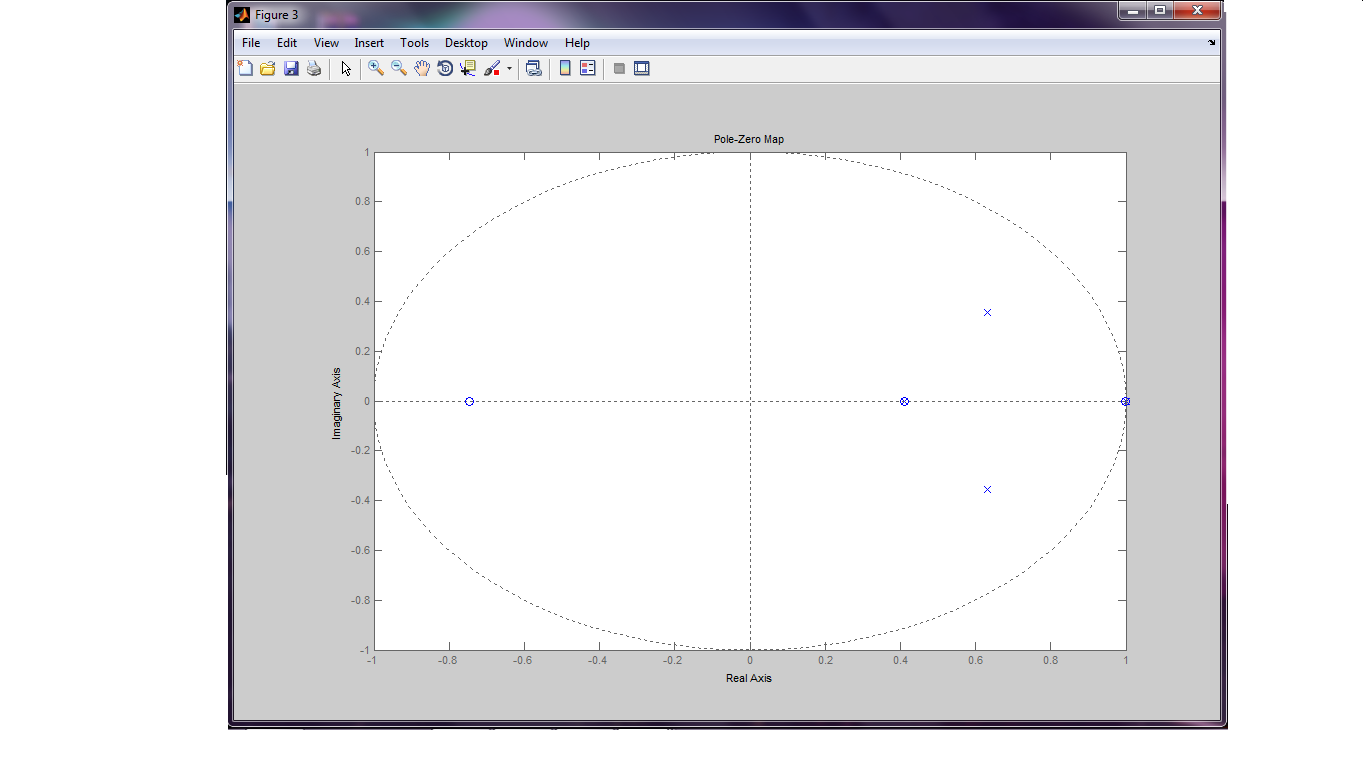




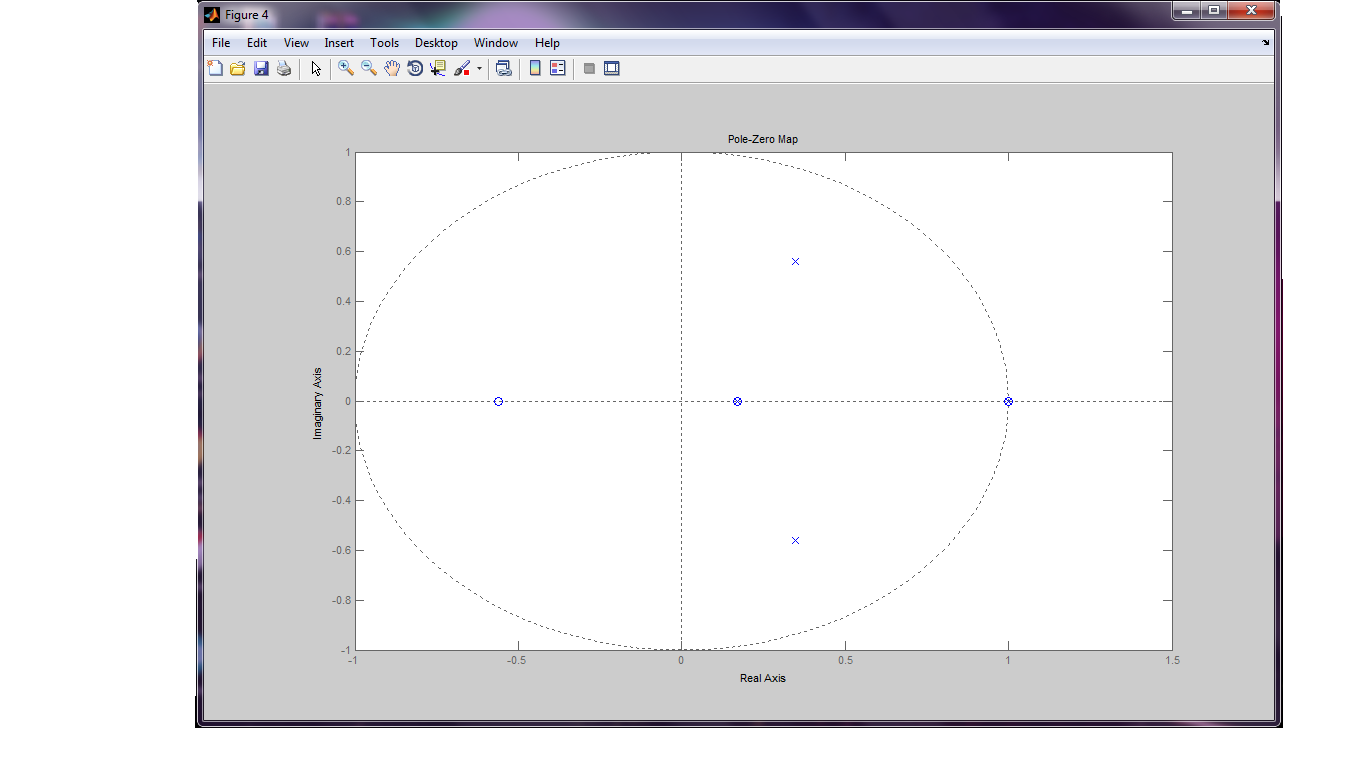
T=0.005



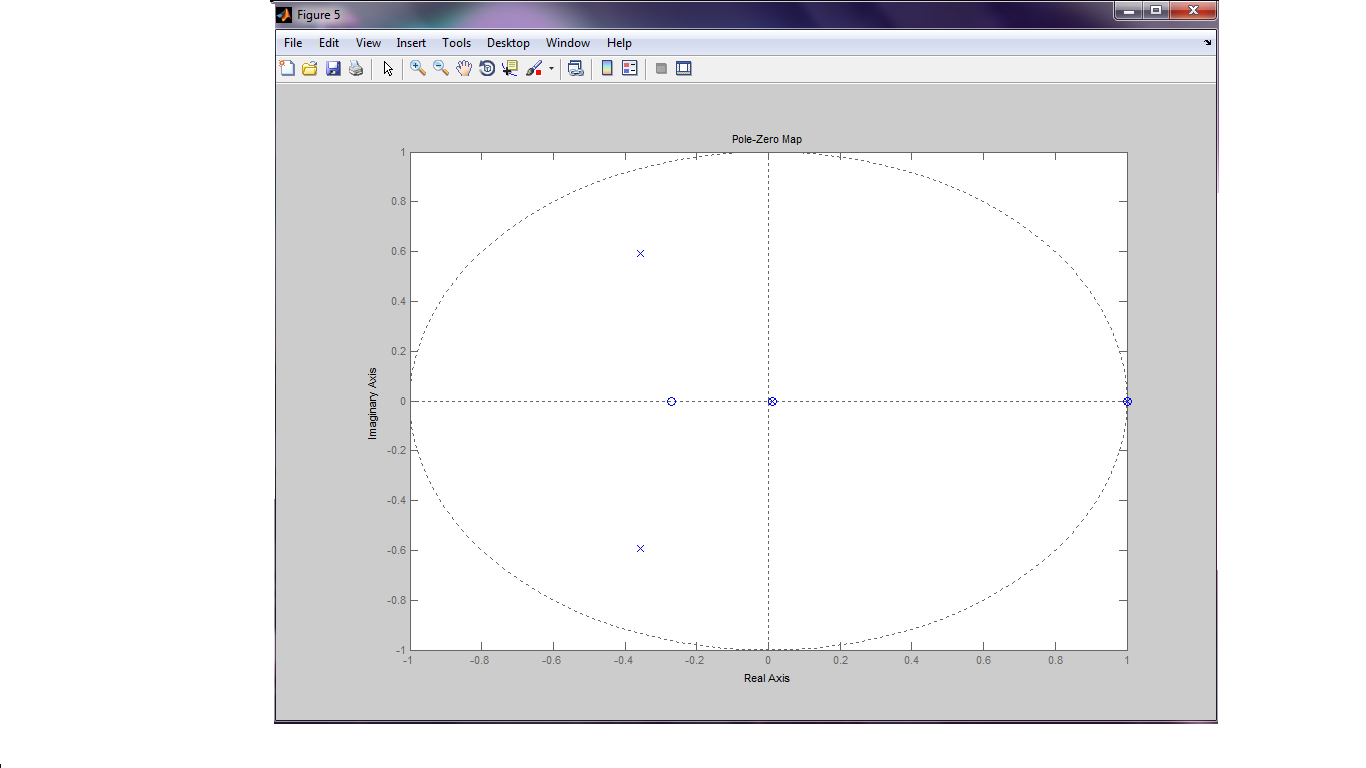
T=0.05



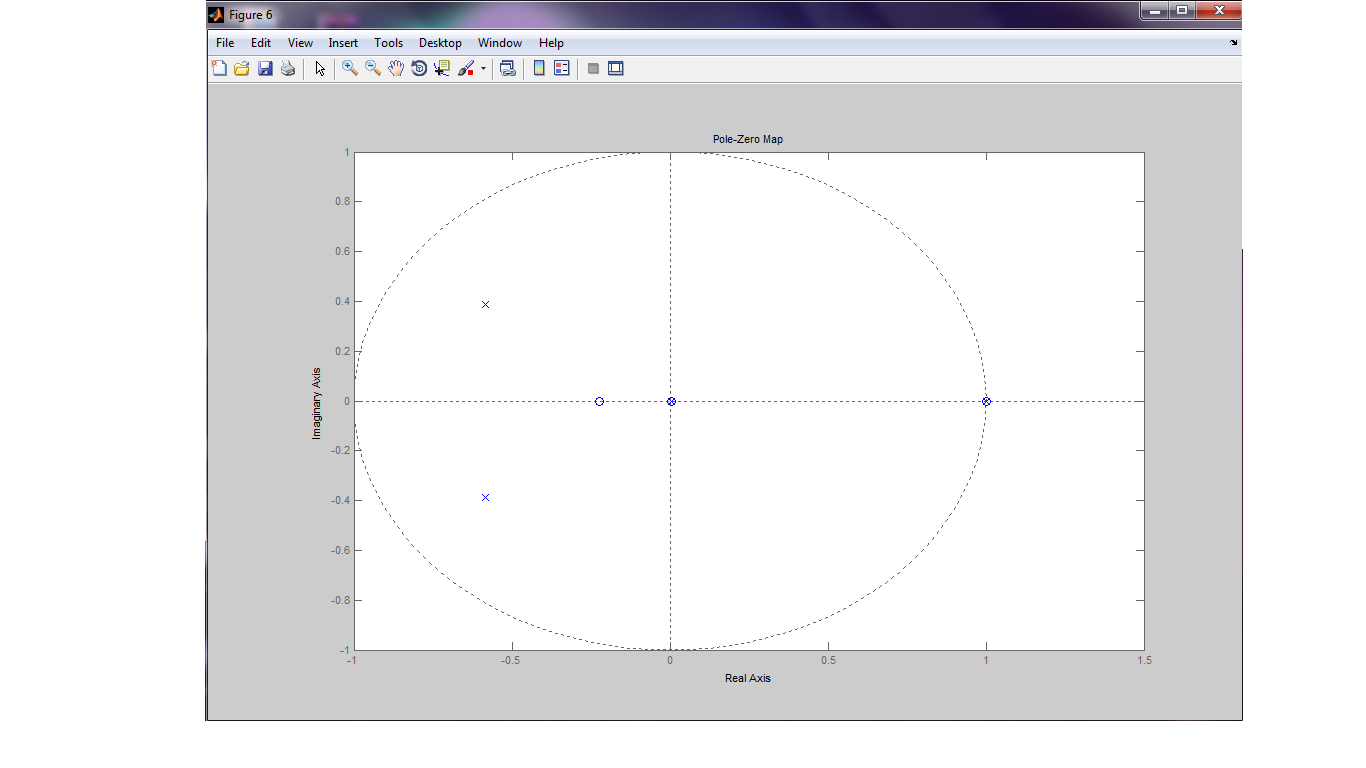
T=0.1



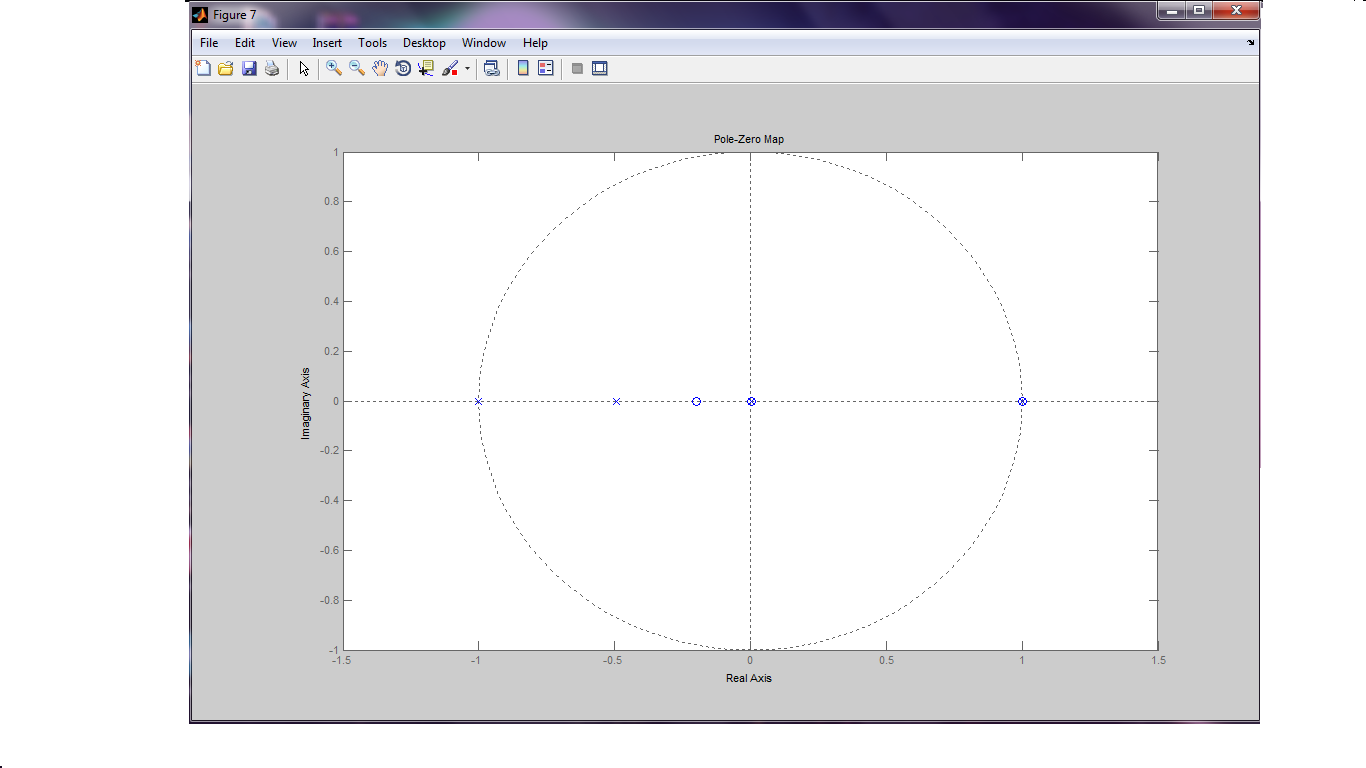
T=0.2



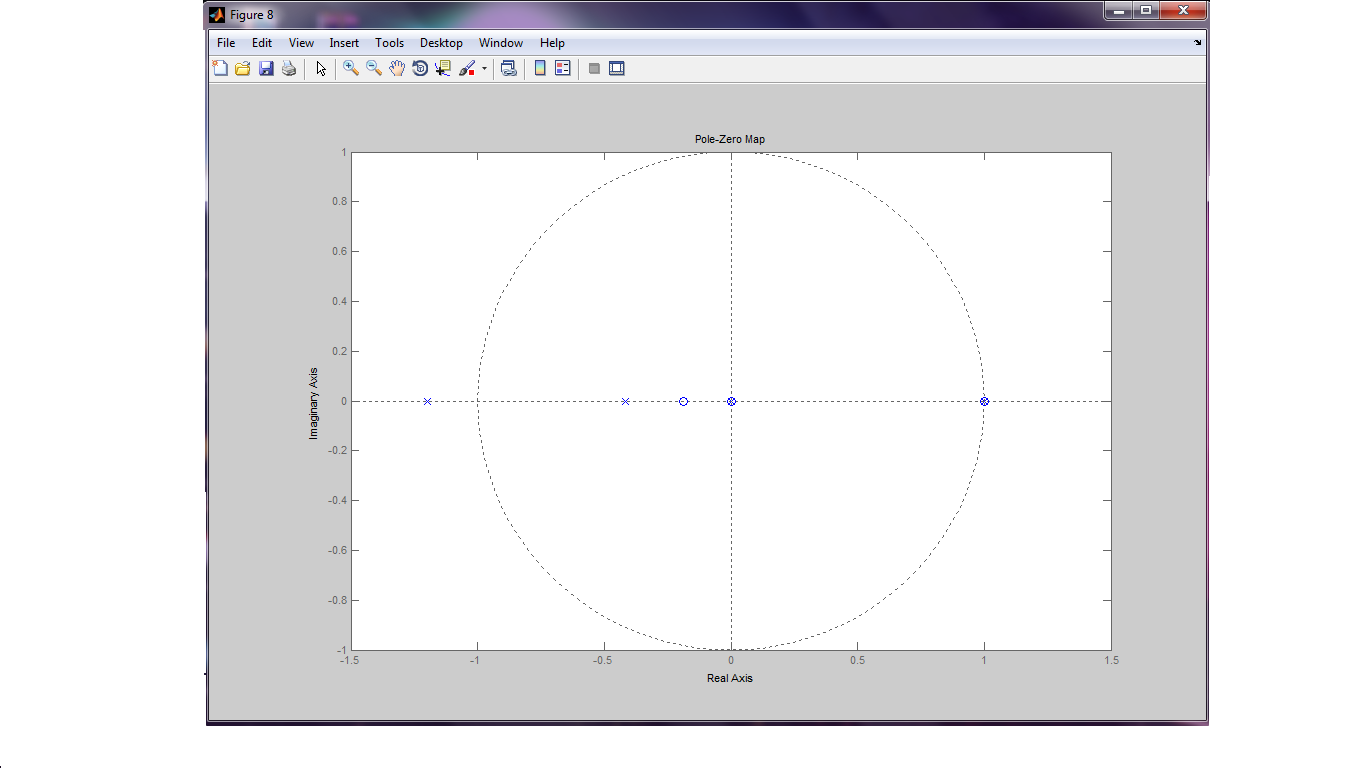
T=0.5



T=0.6



T=0.6741



T=0.7

* **iii**

As the T value increases, the poles move outside the unit circle and the system becomes unstable. For T=0674 the system is critically stable. For the values that are larger than that the system is unstable.