Result obtained

```
Command Window

Enter Mass Values (kg)
m1 = 6000
m2 = 7000
m3 = 8000
m4 = 10000
m5 = 12000
Enter Spring Stiffness Values (N/m)
k1 = 1200
k2 = 1500
k3 = 1800
k4 = 2400
k5 = 3000
=====================================
         EIGENVALUE ANALYSIS
=====================================
Eigenvalues (lambda):
    0.0250
    0.1482
    0.3524
    0.7599
    0.5827


Natural Frequencies:
w1 = 0.158183 rad/s    (f1 = 0.025176 Hz)
w2 = 0.384937 rad/s    (f2 = 0.061265 Hz)
w3 = 0.593636 rad/s    (f3 = 0.094480 Hz)
w4 = 0.871703 rad/s    (f4 = 0.138736 Hz)
w5 = 0.763378 rad/s    (f5 = 0.121495 Hz)
------------------------------------
SYSTEM IS STABLE
All eigenvalues are positive
------------------------------------
```

Graph

Eigenvalues on Complex Plane