```
sigma1 = 0.7;
sigma2 = 1.0;
sigma3 = 1.5;

a1 = (2/sigma1)^2;
a2 = (2/sigma2)^2;
a3 = (2/sigma3)^2;

s = tf('s');
tf1 = a1/(s^2+4*s+a1);
tf2 = a2/(s^2+4*s+a2);
tf3 = a3/(s^2+4*s+a3);

pole1 = pole(tf1)
pole2 = pole(tf2)
pole3 = pole(tf3)
```

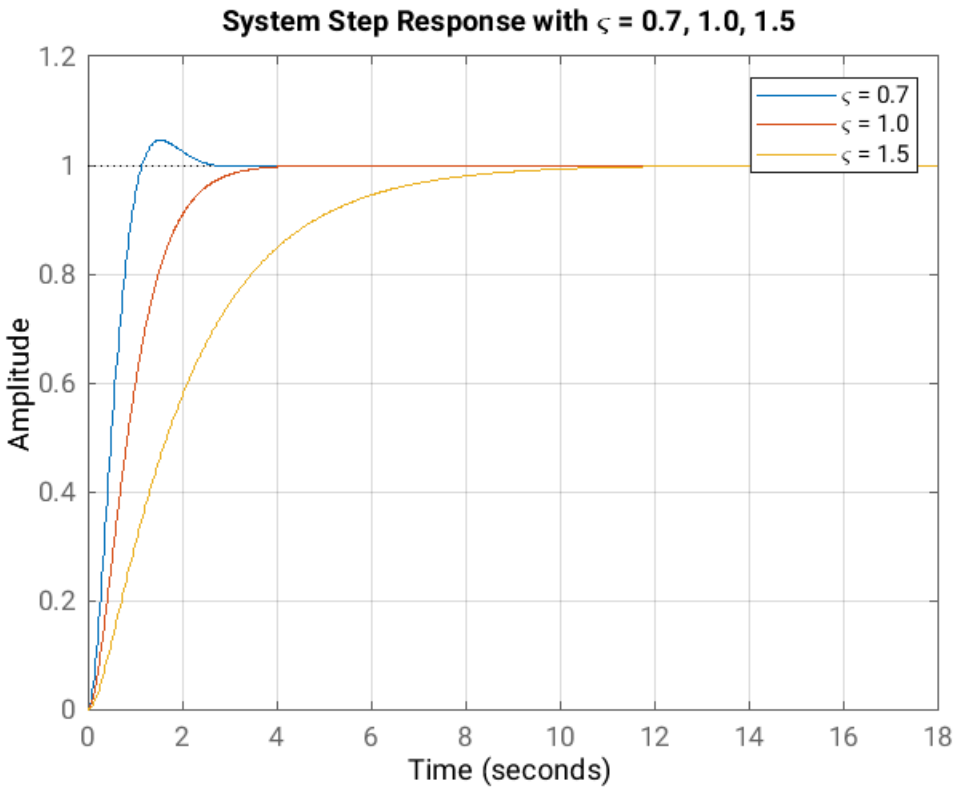
```
pole1 =

  -2.0000 + 2.0404i
  -2.0000 - 2.0404i


pole2 =

    -2
    -2


pole3 =

   -3.4907
   -0.5093
```

```
stepinfo1 = stepinfo(tf1)
stepinfo2 = stepinfo(tf2)
stepinfo3 = stepinfo(tf3)
```

```
stepinfo1 =

  struct with fields:

         RiseTime: 0.7444
    TransientTime: 2.0926
     SettlingTime: 2.0926
      SettlingMin: 0.9001
      SettlingMax: 1.0460
        Overshoot: 4.5986
       Undershoot: 0
```

```
            Peak: 1.0460
        PeakTime: 1.5427


stepinfo2 =

  struct with fields:

        RiseTime: 1.6790
    TransientTime: 2.9170
     SettlingTime: 2.9170
      SettlingMin: 0.9008
      SettlingMax: 0.9991
        Overshoot: 0
       Undershoot: 0
             Peak: 0.9991
        PeakTime: 4.6900


stepinfo3 =

  struct with fields:

        RiseTime: 4.3938
    TransientTime: 7.9910
     SettlingTime: 7.9910
      SettlingMin: 0.9012
      SettlingMax: 0.9999
        Overshoot: 0
       Undershoot: 0
             Peak: 0.9999
        PeakTime: 19.4987
```

```
figure;
step(tf1);
title("System Step Response with \varsigma = 0.7, 1.0, 1.5");
hold on;
step(tf2);
step(tf3);
grid on; grid minor;
legend;
xlabel("Time");
ylabel("Amplitude");
legend('\varsigma = 0.7','\varsigma = 1.0','\varsigma = 1.5');
```



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