```
Editor - G:\My Drive\1 MSU - IIT\8 Fourth Year Second Sem\Digital Signal Processing\Matlab\Baliguat_Exercise_6.m
 Baliguat_Exercise_6.m × +
 1 2
      %Baliguat, Dennis Ivan C.
          X(Z) = (z + 3)/(5z3 + 3z2 - 2.5)t. 
 3 -
        clear
 4 -
       clc
       z = zpk('z');
       H = (z+3)/(5*z^3 + 3*z^2 - 2.5);
 6 -
 7
        \frac{8}{3} H = (3 + 3*z^-1 + 3*z^-2) / (1 + 0.6*z^-1 + 0.81*z^-2);
 8 -
 9 -
        pole(H)
10 -
        zero(H)
11 -
       zplane(zero(H), pole(H));
12
Command Window
  H =
                0.2 (z+3)
    (z-0.636) (z^2 + 1.236z + 0.7861)
  Sample time: unspecified
  Discrete-time zero/pole/gain model.
  ans =
    -0.6180 + 0.6358i
    -0.6180 - 0.6358i
     0.6360 + 0.0000i
                                                                              - 🗆
                               Figure 1
                                                                                       ×
                               File Edit View Insert Tools Desktop Window Help
  ans =
                               🖺 😝 📓 🍃 🖺 🖺 🖺 🖒 🛅
      -3.0000
                                    1.5
fx >>
                                   0.5
                                 Imaginary Part
                                    0
                                   -0.5
                                    -1
                                            -2.5 -2 -1.5
                                                                 -0.5
                                                                        0
                                                                             0.5
                                                          Real Part
```

```
Editor - G:\My Drive\1 MSU - IIT\8 Fourth Year Second Sem\Digital Signal Processing\Matlab\Baliguat_Exe
Baliguat_Exercise_6.m × +
 1
        %Baliguat, Dennis Ivan C.
          X(Z) = (z + 3)/(5z3 + 3z2 - 2.5)t. 
 2
 3 -
        clear
 4 -
        clc
 5 -
        z = zpk('z');
        % H = (z+3)/(5*z^3 + 3*z^2 - 2.5);
 6
 7 -
        H = (3 + 3*z^{-1} + 3*z^{-2}) / (1 + 0.6*z^{-1} + 0.81*z^{-2});
 8 -
 9 -
        pole(H)
10 -
        zero(H)
11 -
         zplane(zero(H), pole(H));
12
Command Window
  н =
      3 z^4 (z^2 + z + 1)
     z^4 (z^2 + 0.6z + 0.81)
  Sample time: unspecified
  Discrete-time zero/pole/gain model.
   ans =
      0.0000 + 0.0000i
      0.0000 + 0.0000i
                                    Figure 1
                                                                                         ×
      0.0000 + 0.0000i
                                    <u>F</u>ile <u>E</u>dit <u>V</u>iew <u>I</u>nsert <u>T</u>ools <u>D</u>esktop <u>W</u>indow <u>H</u>elp
     -0.0000 + 0.0000i
                                    🖺 😅 📓 🦫 🗒 📗 🗉 🗎
     -0.3000 + 0.8485i
     -0.3000 - 0.8485i
                                         0.8
   ans =
                                         0.6
     -0.5000 + 0.8660i
                                         0.4
     -0.5000 - 0.8660i
                                       0.2
     -0.0000 + 0.0000i
                                       Imaginary F
      0.0000 + 0.0000i
      0.0000 + 0.0000i
      0.0000 + 0.0000i
                                         -0.4
                                        -0.6
f_{\frac{x}{2}} >>
                                         -0.8
                                                  -1
                                                          -0.5
                                                                            0.5
```

Real Part

```
Editor - G:\My Drive\1 MSU - IIT\8 Fourth Year Second Sem\Digital Signal Processing\Matlab\Baligu
  Baliguat_Exercise_6.m × +
                                %Baliguat, Dennis Ivan C.
    1
    2
    3 -
                                clear
    4 -
                                clc
     5 -
                                syms n;
                                 z = zpk('z');
     6 -
                                 H = ztrans(n^2)
     8 -
                                 [num, den] = numden(H);
    9 -
                                 Ts = 0.1;
  10 -
                                 f = tf(sym2poly(num), sym2poly(den), Ts)
  11 -
                                pole(f)
  12 -
                                zero(f)
  13 -
                                 zplane(zero(f), pole(f));
  14
  Command Window
          H =
           (z*(z + 1))/(z - 1)^3
           f =
                                                z^2 + z
                   z^3 - 3 z^2 + 3 z - 1
           Sample time: 0.1 seconds
           Discrete-time transfer function.
           ans =
                                                                                                                 Figure 1
                                                                                                                                                                                                                                                                                                                   ×
                                                                                                                 <u>File Edit View Insert Tools Desktop Window Help</u>
                       1.0000 + 0.0000i
                                                                                                               🖺 😅 📓 🦫 🗒 📗 📰 📙 🖫
                       1.0000 + 0.0000i
                        1.0000 - 0.0000i
                                                                                                                                                                                                                                                                                     ☆<br/>
<br/>
<br
                                                                                                                                      1
                                                                                                                                  0.8
           ans =
                                                                                                                                 0.6
                                0
                                                                                                                                  0.4
                             ^{-1}
                                                                                                                        maginary Part
                                                                                                                                0.2
f<u>x</u> >>
                                                                                                                                    0
                                                                                                                                -0.2
                                                                                                                                 -0.4
                                                                                                                                 -0.6
                                                                                                                                 -0.8
                                                                                                                                     -1
                                                                                                                                                                    -1
                                                                                                                                                                                                   -0.5
                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                      0.5
                                                                                                                                                                                                                            Real Part
```