

```

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 %Baliguat, Dennis Ivan C.
2 % X(Z) = (z + 3)/(5z^3 + 3z^2 - 2.5)z.
3 clear
4 clc
5 z = zpk('z');
6 % H = (z+3)/(5*z^3 + 3*z^2 - 2.5);
7 H = (3 + 3*z^-1 + 3*z^-2) / (1 + 0.6*z^-1 + 0.81*z^-2);
8 H
9 pole(H)
10 zero(H)
11 zplane(zero(H), pole(H));
12

```

Command Window

H =

$$\frac{3z^4(z^2 + z + 1)}{z^4(z^2 + 0.6z + 0.81)}$$

Sample time: unspecified

Discrete-time zero/pole/gain model.

ans =

```

0.0000 + 0.0000i
0.0000 + 0.0000i
0.0000 + 0.0000i
-0.0000 + 0.0000i
-0.3000 + 0.8485i
-0.3000 - 0.8485i

```

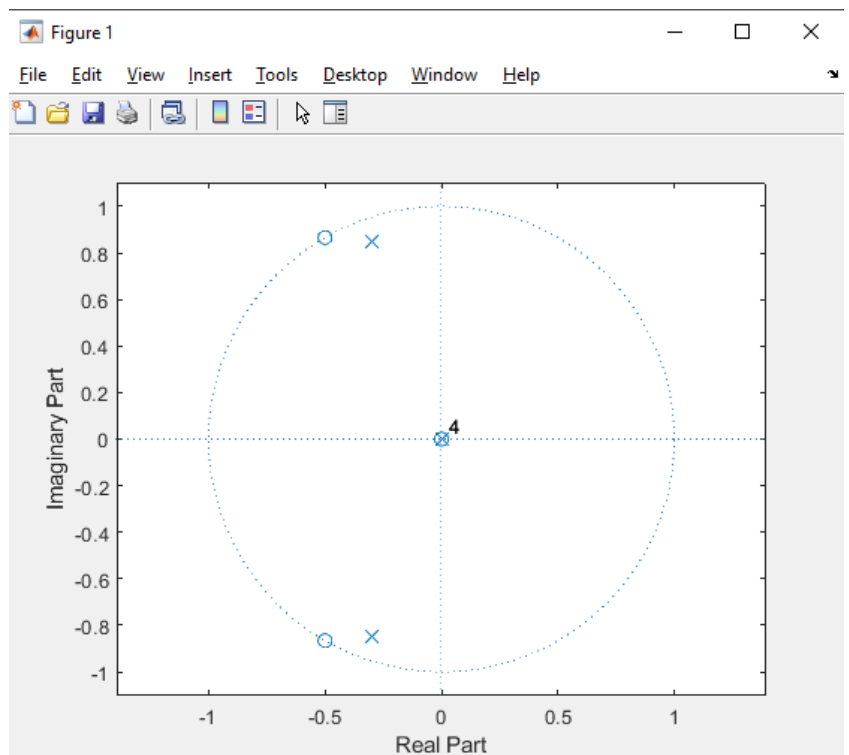
ans =

```

-0.5000 + 0.8660i
-0.5000 - 0.8660i
-0.0000 + 0.0000i
0.0000 + 0.0000i
0.0000 + 0.0000i
0.0000 + 0.0000i

```

fx >>



```
Editor - G:\My Drive\1 MSU - IIT\8 Fourth Year Second Sem\Digital Signal Processing\Matlab\Baliguat_Exercise_6.m
Baliguat_Exercise_6.m x +
1 %Baliguat, Dennis Ivan C.
2
3 clear
4 clc
5 syms n;
6 z = zpk('z');
7 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
15
```

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 =
1.0000 + 0.0000i
1.0000 + 0.0000i
1.0000 - 0.0000i
```

```
ans =
0
-1
```

fx >>

