

### Q1.1

The screenshot shows the MATLAB IDE interface. The top window is titled 'control\_lab1.m' and contains the following code:

```
1 sym z n
2 f=0.5^n;
3 ztrans(f)
```

The bottom window is the 'Command Window' and displays the following output:

```
>> control_lab1
ans =
z/(z - 1/2)
>>
```

### Q1.2

The screenshot shows the MATLAB IDE interface. The top window is titled 'control\_lab1.m' and contains the following code:

```
1 sym z n a T
2 f= exp(-a*n*T);
3 ztrans(f)
```

The bottom window is the 'Command Window' and displays the following output:

```
>> control_lab1
ans =
z/(z - exp(-T*a))
>>
```

At the bottom right of the interface, there is a status bar with the text: 'Editor: 100% UTF-8 CRLF Script Ln 3 Col 10'.

## Q2.1

The screenshot shows the MATLAB Editor and Command Window interface. The Editor window displays the script `control_lab1.m` with the following code:

```
control_lab1.m
/MATLAB Drive/control_lab1.m
1    syms z n
2    FZ=3*z/(z+1);
3    iztrans(FZ)
```

The Command Window below shows the execution of the script and its output:

```
>> control_lab1
ans =
3*(-1)^n
>>
```

The status bar at the bottom right indicates "Editor: 100% UTF-8 CRLF Script Ln 2 Col 11".

## Q2.2

The screenshot shows the MATLAB Editor and Command Window interface. The Editor window displays the script `control_lab1.m` with the following code:

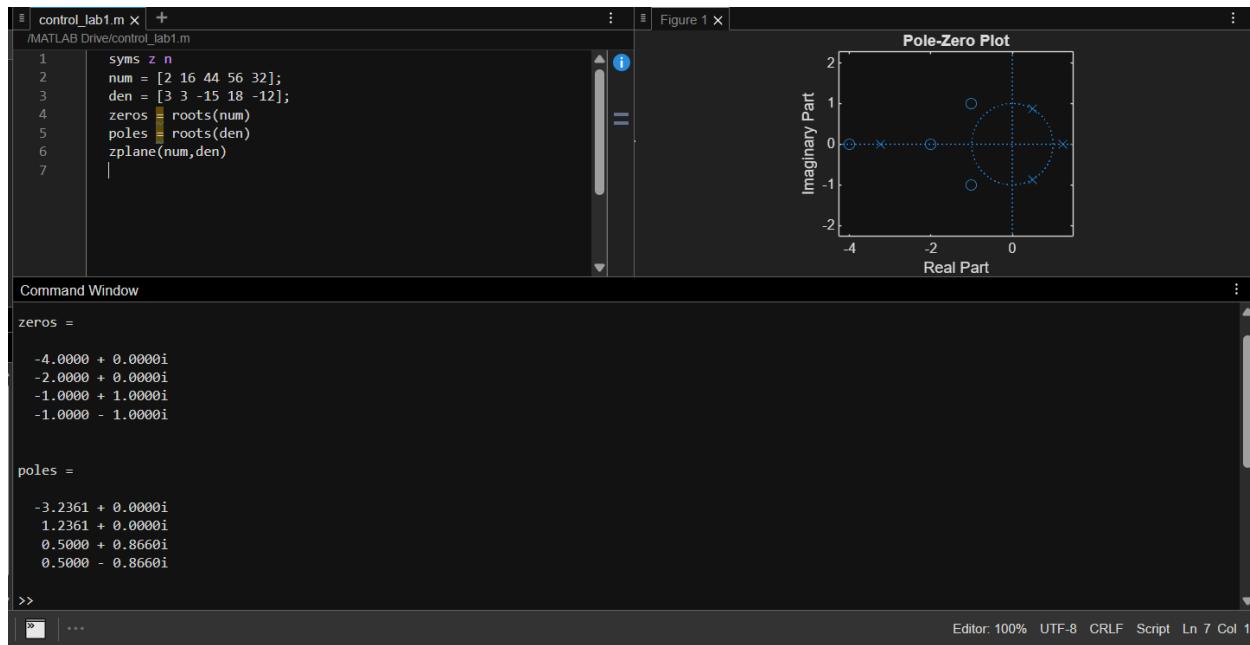
```
control_lab1.m
/MATLAB Drive/control_lab1.m
1    syms z n
2    FZ=18*z^3/(18*z^3+3*z^2-4*z-1);
3    iztrans(FZ)
```

The Command Window below shows the execution of the script and its output:

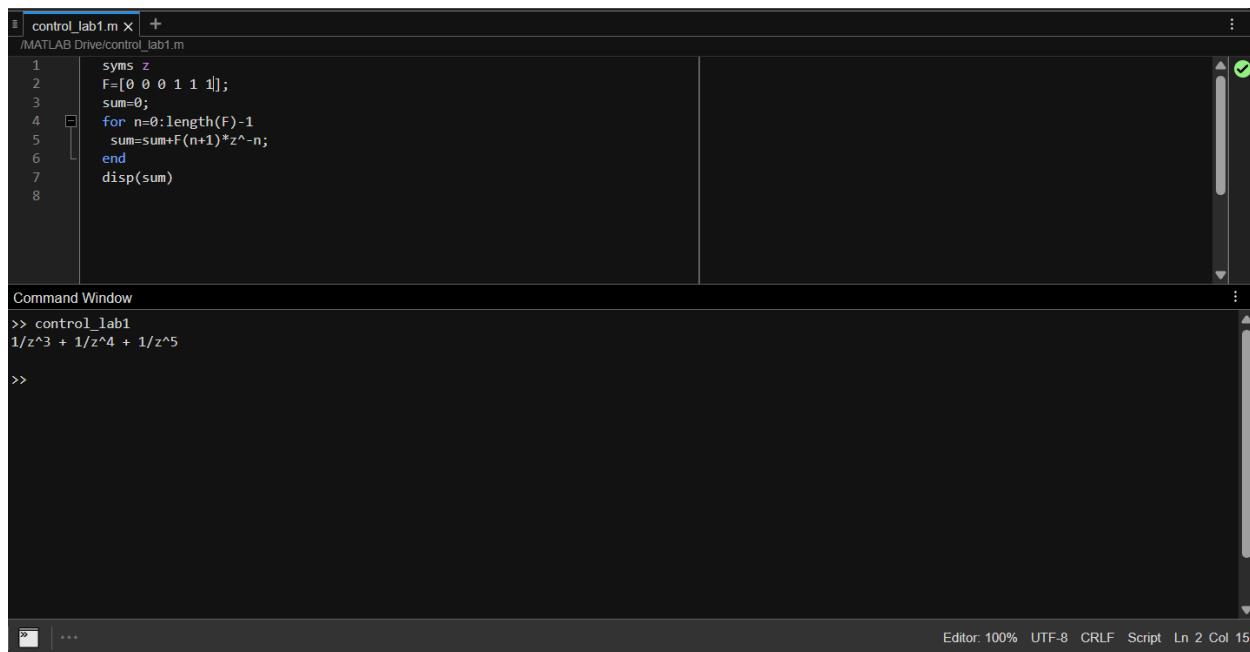
```
>> control_lab1
ans =
(9*(1/2)^n)/25 + (26*(-1/3)^n)/25 + (2*(-1/3)^n*(n - 1))/5
>>
```

The status bar at the bottom right indicates "Editor: 100% UTF-8 CRLF Script Ln 3 Col 12".

### Q.3



### Q4.1



## Q4.2

The screenshot shows the MATLAB interface with two main windows: the Editor and the Command Window.

**Editor:** The file `control_lab1.m` is open. The code inside is:

```
1 syms z
2 F=[0 2^-0.5 1 2^-0.5 0 0];
3 sum=0;
4 for n=0:length(F)-1
5     sum=sum+F(n+1)*z^-n;
6 end
7 disp(sum)
```

**Command Window:** The command `>> control_lab1` is entered, followed by its output:

```
>> control_lab1
2^(1/2)/(2*z) + 2^(1/2)/(2*z^3) + 1/z^2
>>
```

At the bottom right of the Command Window, there is status information: "Editor: 100% UTF-8 CRLF Script Ln 8 Col 1".