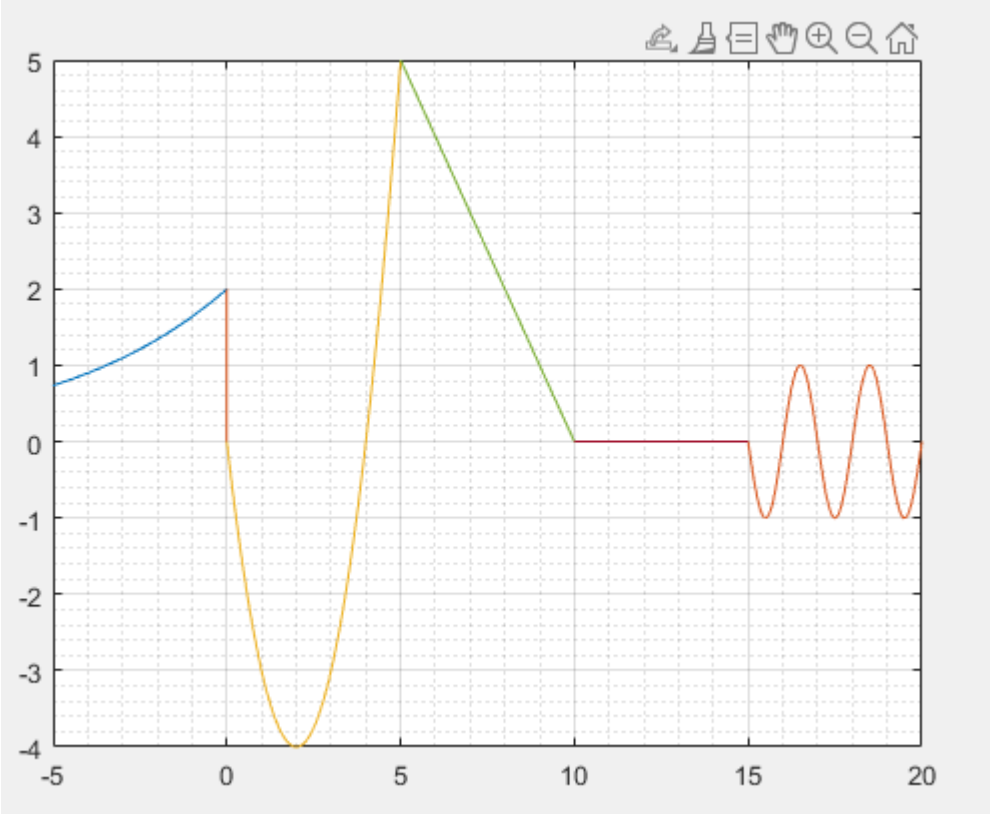
Introduction:

Signal generator is a mini-program running on MATLAB which asks the user to enter the parameters of the signal of interest, this signal is then plotted in a MATLAB figure. The program then asks the user whether he wants to perform any operations on the signal and about those operations, the final signal is then plotted in another MATLAB figure.

Initial Signal Generation:

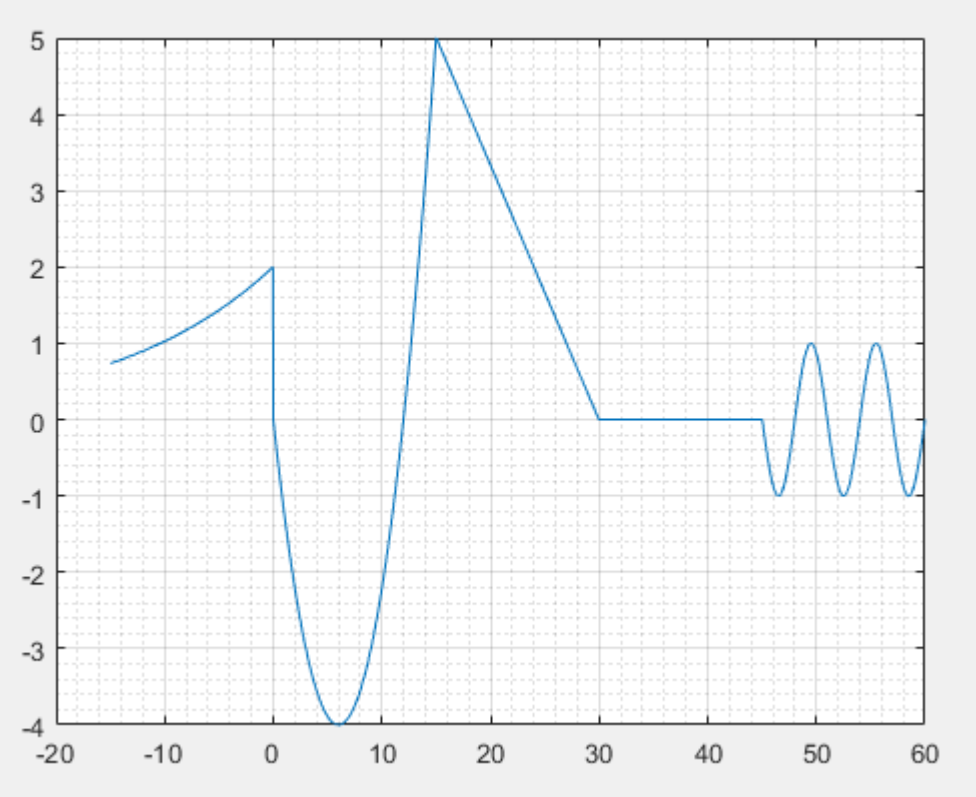
```
Command Window
Sampling frequency of the siganl: 100
Start time of the siganl: -5
End time of the signal: 20
Number of breakpoints: 4
enter the time of the corresponding timestamp: 0
enter the time of the corresponding timestamp: 5
enter the time of the corresponding timestamp: 10
enter the time of the corresponding timestamp: 15

ans =

    'you need to enter the specifications of the signal over each period as following :
     1:DC signal
     2:Ramp signal
     3:General ploynomial
     4:Exponential
     5:Sinusoidal'

The equivalent index for the type of signal: 4
Amplitude= 2
Exponent= 0.2
The equivalent index for the type of signal: 3
Highest power in the equation= 2
intercept = 0
coeffecients as follwoing [1 2 3 ...]= [-4 1]
The equivalent index for the type of signal: 2
slope=-1
intercept= 10
The equivalent index for the type of signal: 1
Amplitude= 0
The equivalent index for the type of signal: 5
Amplitude= 1
Frequency= 0.5
fx phase( °)= 0
```


5
4
3
2
1
0
-1
-2
-3
-4
-5
0
5
10
15
20

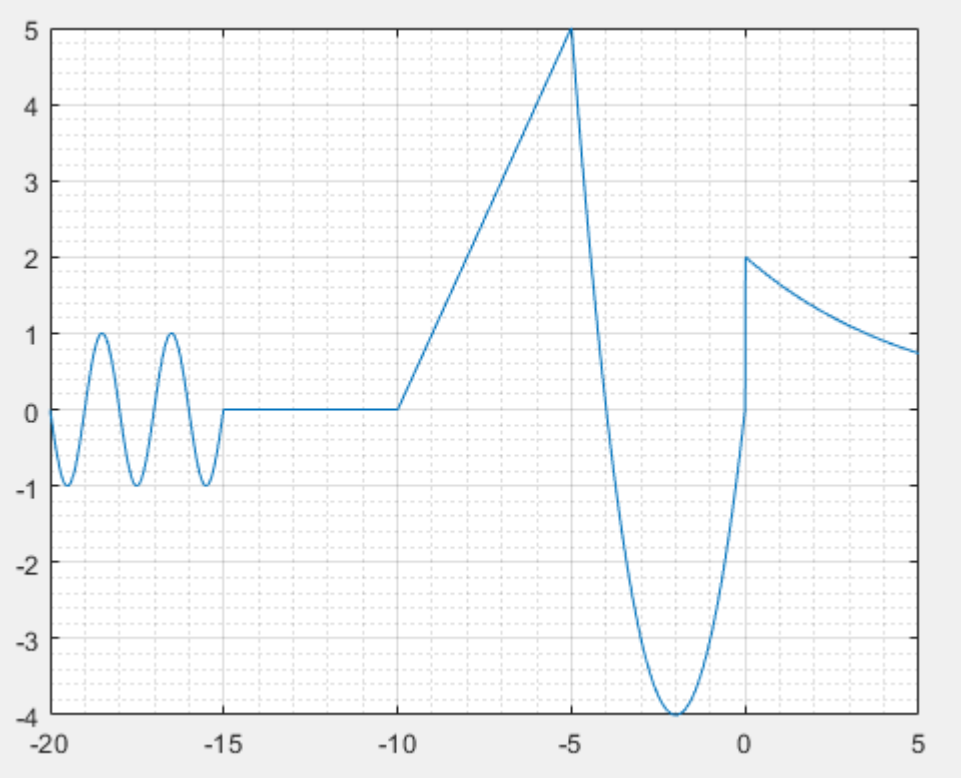
Operation performance on the signal:

```
do you want to perfrom any operatoin on the signal?
press 1 for yes
press 2 for no
 1
Enter number of operations you want2

Number_of_operations =

     2


ans =

    'kindly choose one of the following operations :
     1:Amplitude Scaling
     2:Time reversal
     3:Time shift
     4:Expanding the signal
     5:Compressing the signal'

Enter the number of the desired operation: 4
```

```
Enter the reciprocal of the coeffecient of t: 3

ans =

    'kindly choose one of the following operations :
     1:Amplitude Scaling
     2:Time reversal
     3:Time shift
     4:Expanding the signal
     5:Compressing the signal'

Enter the number of the desired operation: 2
```



1st operation



2nd operation