```
%  MATLAB program for harmonic analysis
disp("NAME : Yash Rathod , PRN : 124B1D025")
```

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```

```
syms n x y
n=input("Enter number of point in exclidind repeated value in y")
```

```
n =
6
```

```
x=input("enter the value of x in row matrix (1xn)")
```

```
x = 1×6
     0     1     2     3     4     5
```

```
y=input("enter the value of y in row matrix (1xn)")
```

```
y = 1×6
     9    18    24    28    26    20
```

```
a=x(1)
```

```
a =
0
```

```
b=x(n)+(x(2)-x(1))
```

```
b =
6
```

```
L=(b-a)/2
```

```
L =
3
```

```
a0=(2/n)*sum(y,'all')
```

```
a0 =
41.6667
```

```
a1=(2/n)*sum(y.*cospi(x/L),'all')
```

```
a1 =
-8.3333
```

```
b1=(2/n)*sum(y.*sinpi(x/L),'all')
```

```
b1 =
-1.1547
```

```
syms x
FS=(a0/2)+a1*cos(pi*x/L)+b1*sin((pi*x)/L)
```

```
FS =
```

$$\frac{125}{6} - \frac{2\sqrt{3}\,\sin\left(\frac{\pi x}{3}\right)}{3} - \frac{25\cos\left(\frac{\pi x}{3}\right)}{3}$$