

```
T = 4;  
A = 5;  
R = 1000;  
C = 0.0005;
```

```
tau = R * C
```

```
tau = 0.5000
```

```
t = -T:0.05:2*T
```

```
t = 1x241  
-4.0000 -3.9500 -3.9000 -3.8500 -3.8000 -3.7500 -3.7000 -3.6500 ...
```

```
n = (1:60)'
```

```
n = 60x1  
1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
⋮
```

```
wn = 2 * pi * n / T
```

```
wn = 60x1  
1.5708  
3.1416  
4.7124  
6.2832  
7.8540  
9.4248  
10.9956  
12.5664  
14.1372  
15.7080  
⋮
```

```
a0 = A
```

```
a0 = 5
```

```
bn = A * (1 - cos(n * pi)) ./ (n * pi)
```

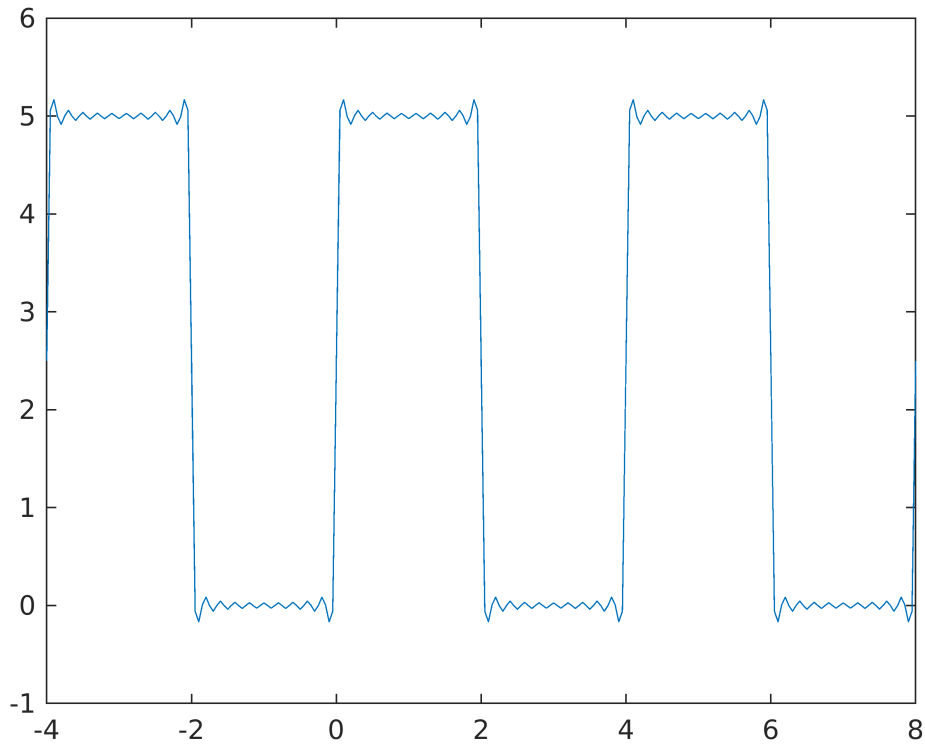
```
bn = 60x1  
3.1831  
0  
1.0610
```

```
0
0.6366
0
0.4547
0
0.3537
0
⋮
```

```
Vin = a0 / 2 + sum(bn .* sin(wn * t), 1)
```

```
Vin = 1x241
2.5000    5.0597    5.1662    4.9923    4.9146    5.0028    5.0583    4.9986 ...
```

```
plot(t, Vin)
```



```
magHjw = 1 ./ sqrt(1 + (R * C * wn).^2)
```

```
magHjw = 60x1
0.7864
0.5370
0.3907
0.3033
0.2468
0.2076
0.1790
0.1572
```

```
0.1401
0.1263
⋮
```

```
magHj0 = 1 / sqrt(1 + (R * C * 0)^2)
```

```
magHj0 = 1
```

```
angleHjw = atan(-R * C * wn)
```

```
angleHjw = 60x1
-0.6658
-1.0039
-1.1694
-1.2626
-1.3214
-1.3617
-1.3909
-1.4130
-1.4303
-1.4442
⋮
```

```
Vc = a0 * magHj0 / 2 + sum(bn .* magHjw .* sin(wn * t + angleHjw), 1)
```

```
Vc = 1x241
0.1237 0.5632 0.9794 1.3602 1.7088 2.0234 2.3052 2.5607 ...
```

```
plot(Vin)
hold on
plot(Vc)
hold off
```

