Computer Systems Engineering Department

Signals And Systems

ENEE2312

Signals Assignment

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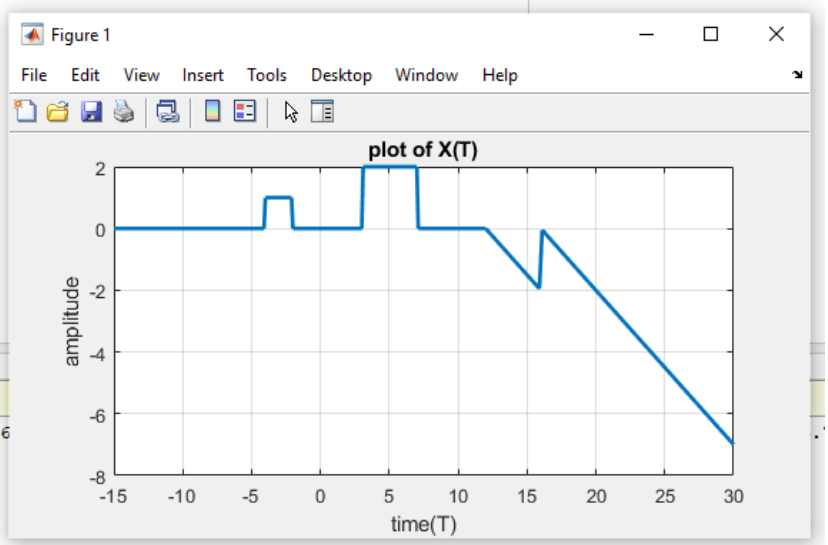
Question #1:

A):

```
%abdelrhman abed
T= -15:0.1:30;
X = 2 * rectpuls((5-t)/4)+ rectpuls((t+3)/2)-heaviside((t-12)/2).*((t-12)/2)+2*heaviside(t-16)

plot(T,X,'Linewidth',2);
xlabel('time(T)');
ylabel('amplitude');
title('plot of X(T)');
grid on;
```

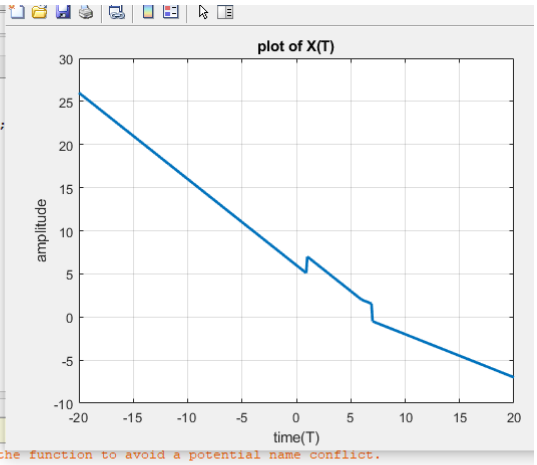
```
Command Window
New to MATLAB? See resources for Getting Started.
    -6.2500   -6.3000   -6.3500   -6

  Column 451

   -7.0000
```



B):

```
%abdelrhman abed
t = -20:0.1:20;
x = 2 * rectpuls((t-4)/6)-heaviside((t-6)/2).*((t-6)/2)+heaviside(-t+6).*(-t+6);
plot(t,x ,'Linewidth',2);
xlabel('time(T)');
ylabel('amplitude');
title('plot of X(T)');
grid on;
```

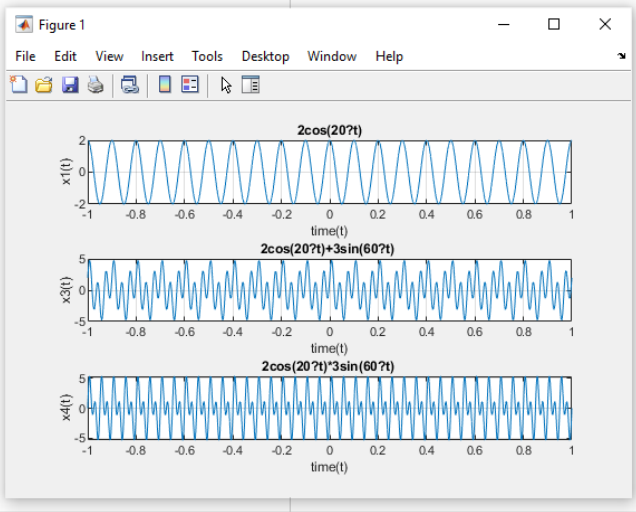
```
Command Window
New to MATLAB? See resources for Getting Started.
Warning: Function cos has the same name as a MATLAB builtin. We suggest you rename the function to avoid a potential name conflict.
>> qustion3
Warning: Function cos has the same name as a MATLAB builtin. We suggest you rename the function to avoid a potential name conflict.
>> qustion3
Warning: Function cos has the same name as a MATLAB builtin. We suggest you rename the function to avoid a potential name conflict.
```



Question #2:

qustion3.m

```
%abdelrhman abed
t = -1:0.0001:1;
x1= 2*cos(20* pi * t);
x2= 3 * sin(60* pi * t);
x3 = (x1 + x2);
x4=(x1.*x2);
subplot(3 , 1, 1) ;
plot(t,x1);
xlabel('time(t)');
ylabel('x1(t)');
title('2cos(20πt)');
grid on ;
subplot(3,1,2);
plot(t,x3);
xlabel('time(t)');
ylabel('x3(t)');
title('2cos(20πt)+3sin(60πt) ');
grid on ;
subplot(3,1,3);
plot(t,x4);
xlabel('time(t)');
ylabel('x4(t)');
title('2cos(20πt)*3sin(60πt) ');
grid on ;
```

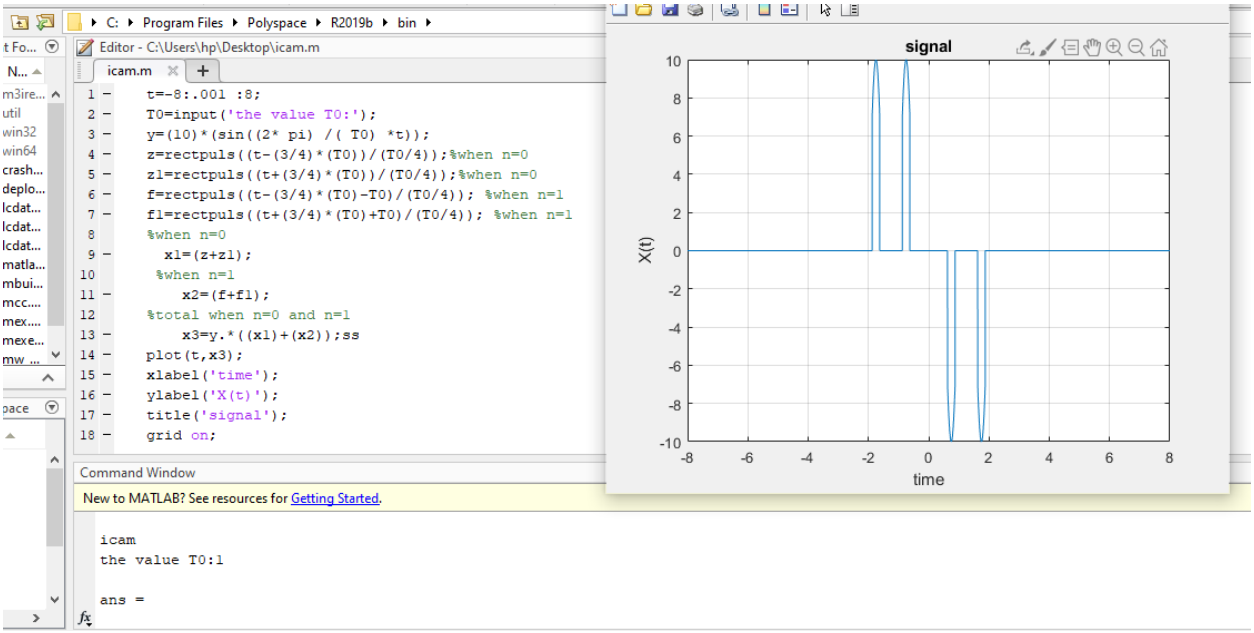


Command Window

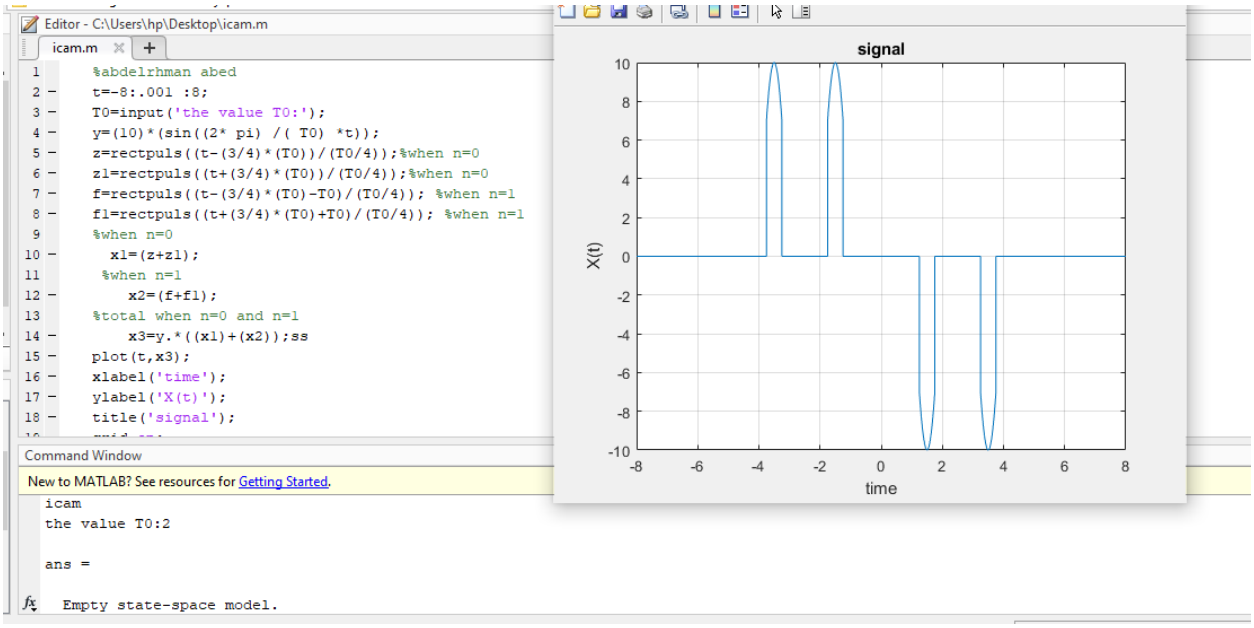
Question #3:

first two periods of the signal /n=o and 1

When T0=1



When T0=2



When T0=3

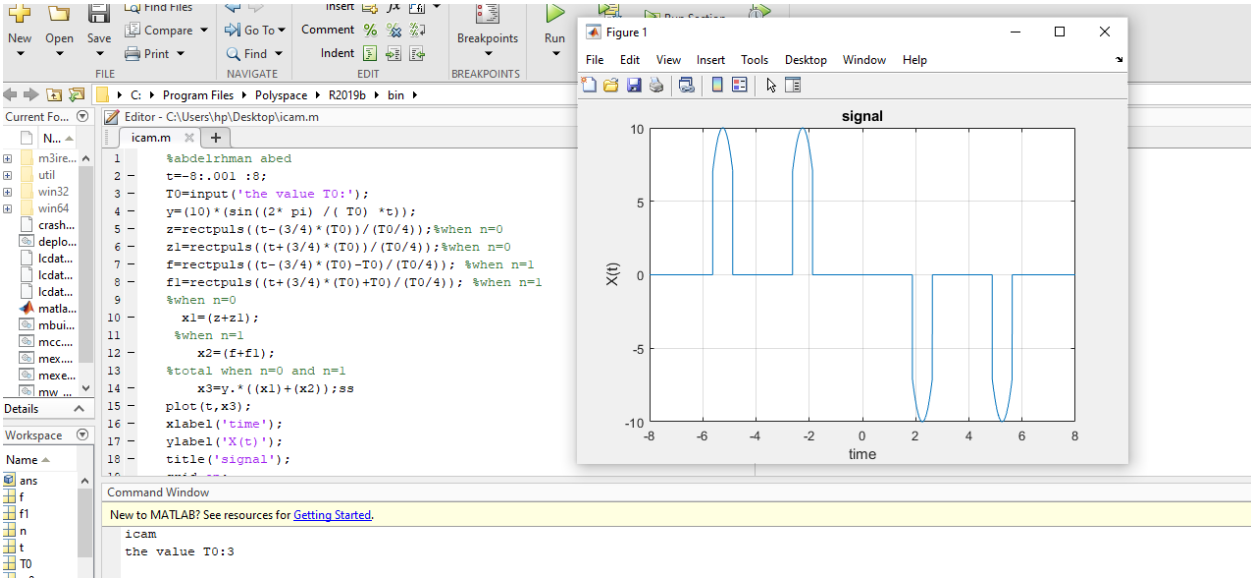


Figure 1
File Edit View Insert Tools Desktop Window Help
signal
X(t)
time
10
5
0
-5
-10
-8 -6 -4 -2 0 2 4 6 8
Editor - C:\Users\hp\Desktop\icam.m
icam.m
%abdelrhman abed
t=-8:.001 :8;
T0=input('the value T0:');
y=(10)*(sin((2* pi) /(T0) *t));
z=rectpuls((t-(3/4)*(T0))/(T0/4));%when n=0
z1=rectpuls((t+(3/4)*(T0))/(T0/4));%when n=0
f=rectpuls((t-(3/4)*(T0)-T0)/(T0/4)); %when n=1
f1=rectpuls((t+(3/4)*(T0)+T0)/(T0/4)); %when n=1
%when n=0
x1=(z+z1);
%when n=1
x2=(f+f1);
%total when n=0 and n=1
x3=y.*((x1)+(x2));ss
plot(t,x3);
xlabel('time');
ylabel('X(t)');
title('signal');
Command Window
New to MATLAB? See resources for Getting Started.
icam
the value T0:3