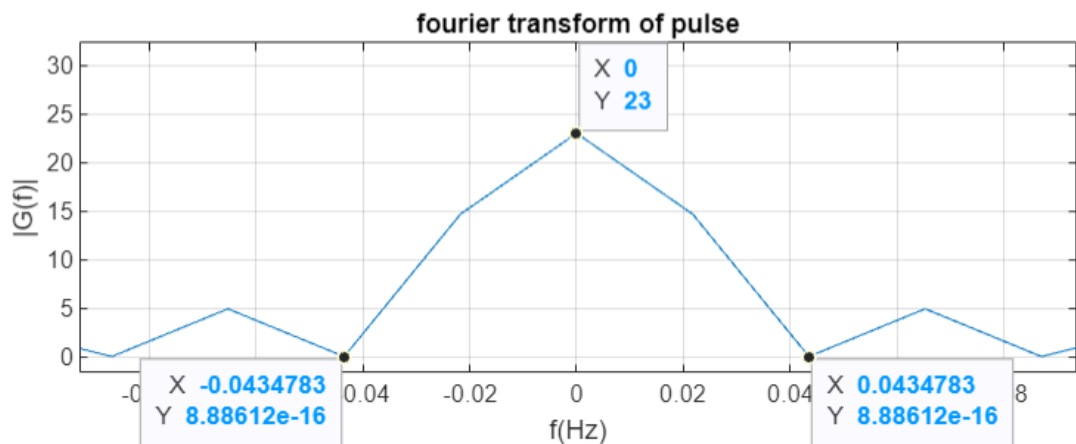
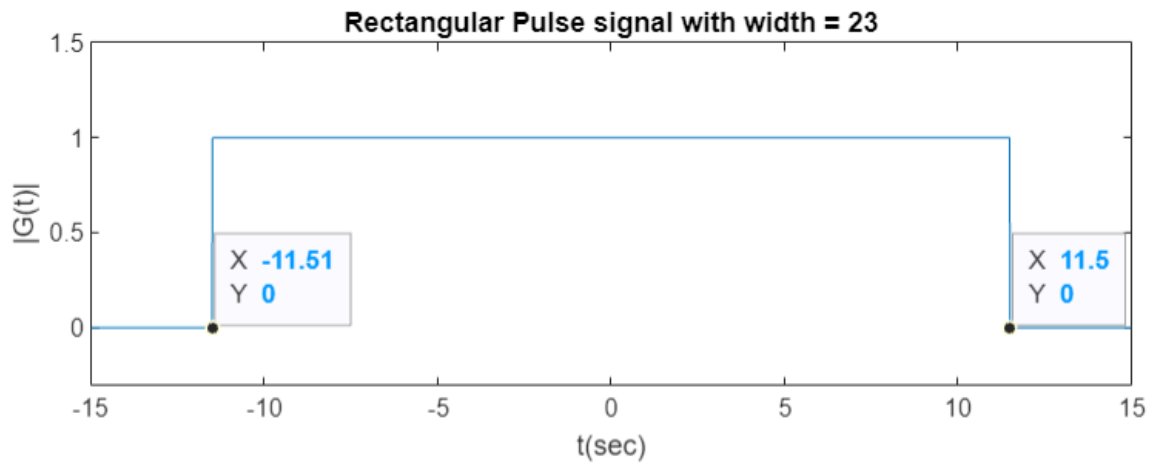


Input

```
clc;
clear;
close all;
Ts = 1;
N=23;
t=-2.3*10:Ts:(N-1)*Ts;
T = 23;
fs=1/Ts;
f=-1*fs:fs/N:(N-1)/(N)*fs;
f=f/2;
x1 = rectpuls(t, T);
subplot(2,1,1);
plot(t,x1);
axis([-15 15 -0.3 1.5]);
title('Rectangular Pulse signal with width = 23');
ylabel('|G(t)|');
xlabel('t(sec)');
xk=fft(x1);
yk=fftshift(xk);
length(xk)
subplot(2,1,2);
plot(f, abs(yk));
title('fourier transform of pulse')
ylabel('|G(f)|');
xlabel('f(Hz)');
grid;
axis([-0.07 0.07 -0.5 25]);
```

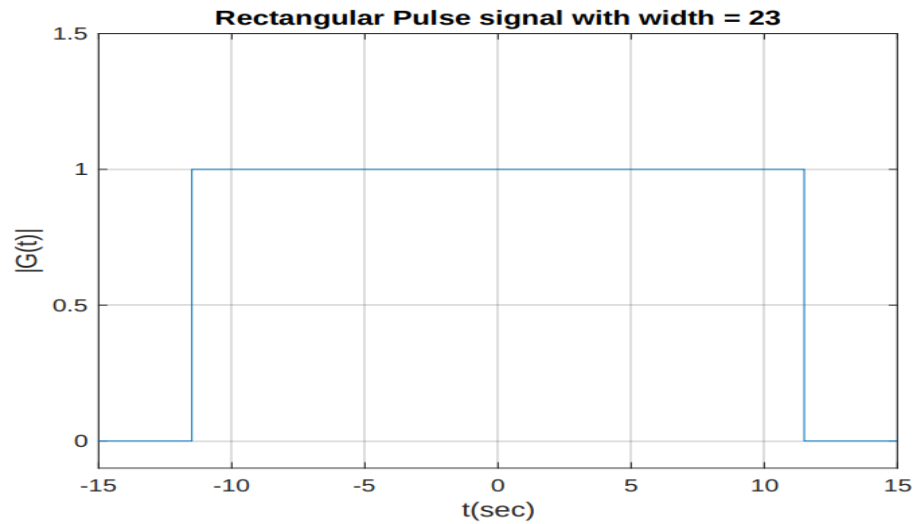
OUTPUT



CODE

```
clc;
clear;
close all;
T=23;
time = -16.5:1:15.5;
y=ones(1,T);
z=zeros(1,5);
pulse=[z y z];
disp(length(time));
disp(length(pulse));
stairs(time,pulse);
title('Rectangular Pulse signal with width = 23');
ylabel('|G(t)|');
xlabel('t(sec)');
axis([-15 15 -0.1 1.5]);
Grid;
```

OUTPUT



CODE

```
Ts = 1;
N=23;
t=-23:Ts:(N-1)*Ts;
T = 23;
fs=1/Ts;
f=-1*fs:fs/N:(N-1)/(N)*fs;
a=2;
x1 = rectpuls(a*t, T);
subplot(3,1,1);
plot(t,x1);
axis([-10 10 -0.3 1.5]);
title('Rectangular Pulse signal with width = 23/2');
ylabel('|G(t)|');
xlabel('t(sec)');
subplot(3,1,2);
x = -0.5:0.00001:0.5;
y = 23*sinc(x*23);
plot(x,abs(y))
axis([-0.199 0.199 -0.5 24]);
title('fourier transform of original pulse pulse [x(t)] ');
ylabel('|G(f)|');
xlabel('f(Hz)');
grid
xk=fft(x1);
yk=fftshift(xk);
length(xk)
subplot(3,1,3);
plot(f/2, T/N*abs(yk));
title('fourier transform of time scaled pulse pulse [x(at)] , a=2')
ylabel('|G(f)|');
xlabel('f(Hz)');
grid;
axis([-0.199 0.199 -0.5 12]);
```

OUTPUT

